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AUSTROTAXACEAE, A NEW FAMILY OF PINOPHYTA

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ABSTRACT

Austrotaxaceae, the name of a monogeneric New Caledonian gymnospermous family long thought to have been validly published by Nakai (1938, 1943), is validated.

KEY WORDS: Austrotaxaceae, nomenclature, New Caledonia

One of the family names in current use not accounted for by Reveal & Hoogland (1990, 1991) is Austrotaxaceae, a monogeneric taxon of Pinophyta from the northern part of New Caledonia. The name is validated here so that it may be included in a list of vascular plant family names (Hoogland & Reveal 1993) being considered for protection under the provisions proposed by Greuter (1991) for names in current use.

Austrotaxaceae Nakai *ex* Takhtajan & Reveal, *fam. nov.* A Taxaceis strobilo masculo paniculato-spicato bracteato, bracteis stamina peltata subtendentibus, strobili foeminei cum bracteatus sterilibus spiraliter dispositis, et tracheidis marginato-punctalis haud spiraliter dispositis incrassatis diversae. - **TYPE:** *Austrotaxus* Compton (1922).

Austrotaxaceae was first proposed by Nakai (Tyosen-Sanrin 158:14. 1938 and Chosakuronbun Mokuroku [*Ord. Fam. Trib. Nov. App.*] 35. 1943), but the

name was a *nomen nudum*. Airy Shaw (in J.H. Willis, *Dict. Fl. Pl. Ferns*, ed. 7, 108. 1966 and ed. 8, 112. 1973), and C.R. Gunn *et al.* (U.S.D.A. Tech. Bull. 1796:11. 1992) cited the name in synonymy, while J.A. Duke (*Fam. Polyclave* A8. 1969) provided diagnostic features but gave no Latin description, so that his name is invalid (Art. 36.1; Greuter *et al.* 1988). The name was accepted by Takhtajan (*Florist. Reg. World* 310. 1986, *nom. nud.*).

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LITERATURE CITED

- Greuter, W. 1991. Proposals to amend the Code, and report of Special Committee 6B: Provisions for granting nomenclatural protection to listed names in current use. *Taxon* 40:669-677.
- , H.M. Burdet, W.G. Chaloner, V. Demoulin, R. Grolle, D.L. Hawksworth, D.H. Nicolson, P.C. Silva, F.A. Stafleu, E.G. Voss, & J. McNeill (editors.). 1988. *International Code of Botanical Nomenclature*, adopted by the Fourteenth International Botanical Congress, Berlin, July–August 1987. *Regnum Veg.* 118.
- Hoogland, R.D. & J.L. Reveal. 1993. *Vascular Plant Family Names in Current Use*. *Regnum Veg.*, in press.
- Reveal, J.L. & R.D. Hoogland. 1990. Validation of five family names in the Magnoliophyta. *Bull. Mus. Natl. Hist. Nat. ser. 4, B Adansonia* 12:205-208.
- Reveal, J.L. & R.D. Hoogland. 1991. Validation of three family names in the Magnoliophyta. *Bull. Mus. Natl. Hist. Nat. ser. 4, B Adansonia* 13:91-93.

THREE NEW SUPRAFAMILIAL NAMES IN MAGNOLIOPHYTA

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ABSTRACT

Three suprafamilial names proposed by Takhtajan in 1967, **Dilleniidae**, **Dilleniaceae**, and **Barbeyales**, are validated here as the initially cited validating descriptions were not in Latin as required by Art. 36.1 of the *International Code of Botanical Nomenclature*.

KEY WORDS: Magnoliophyta, subclass, superorders, orders, nomenclature

In 1967, the junior author proposed a series of suprafamilial names within Magnoliophyta, basing each on "a previously and effectively published description or diagnosis" as required by Art. 32.1(c) of the *International Code of Botanical Nomenclature* (Greuter *et al.* 1988). Unfortunately, three of those new names were not validated by a Latin description or diagnosis as mandated by Art. 36.1. Accordingly, the following names, long in use, are proposed again.

Dilleniidae Takhtajan *ex* Reveal & Takhtajan, *subclass. nov.* based on Dilleniaceae R.A. Salisbury, *Parad. Lond.* 2: sub t. 73. 1807 ("Dilleneae").
- T.: *Dillenia* Linnaeus (1753).

Dilleniaceae Takhtajan *ex* Reveal & Takhtajan, *superord. nov.* based on Dilleniaceae R.A. Salisbury, *Parad. Lond.* 2: sub t. 73. 1807 ("Dilleneae").
- T.: *Dillenia* Linnaeus (1753).

Barbeyales Takhtajan *ex* Reveal & Takhtajan, *ord. nov.* based on the original description of the type genus *Barbeya* Schweinfurth, *Malpighia* 5:332. 1892.; Barbeyaceae Rendle, 1916, *nom. cons.*

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LITERATURE CITED

- Greuter, W., H.M. Burdet, W.G. Chaloner, V. Demoulin, R. Grolle, D.L. Hawksworth, D.H. Nicolson, P.C. Silva, F.A. Stafleu, E.G. Voss, & J. McNeill (editors.). 1988. *International Code of Botanical Nomenclature*, adopted by the Fourteenth International Botanical Congress, Berlin, July-August 1987. *Regnum Veg.* 118.
- Takhtajan, A.L. 1967. *Systema et Phylogenia Magnoliophytorum*. Officna Editoria "Nauka", Leningrad, U.S.S.R.

NEW ORDINAL NAMES FOR EXTANT VASCULAR PLANTS

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ABSTRACT

Ten ordinal names proposed by me in 1992 are validated here as the cited validating descriptions were not in Latin as required by Art. 36.1 of the *International Code of Botanical Nomenclature*. Sixteen additional ordinal names discovered in the literature since 1992 are validly published: ten are members of Polypodiophyta: **Aspleniales**, **Blechnales**, **Dicksoniales**, **Hymenophyllopsidales**, **Loxsomatales**, **Mantoniales**, **Negripteridales**, **Plagiogyriales**, **Platyzomatales**, and **Stromatopteridales**. Two are referred to Pinophyta: **Cephalotaxales** and **Sciadopityales**. The remaining five are flowering plants (Magnoliophyta): **Byblidales**, **Icacinales**, **Myrothamnales**, **Rhizophorales**, and **Tecophilaeales**.

KEY WORDS: Polypodiophyta, Pinophyta, Magnoliophyta, orders, nomenclature

In an article published in 1992, I attempted to validate numerous ordinal names now in current use but failed to follow all of the provisions in the *International Code of Botanical Nomenclature* (Greuter *et al.* 1988). Although all of the validating descriptions (Art. 32.1[c]) cited were validly published (Art. 32.3), I did not realize that Art. 36.1 mandated that after 1 Jan 1935, a name of a new taxon (not defined in the *Code* except partially in Art. 72.1[a]) must be accompanied by a reference to a previously and effectively published Latin description or diagnosis. As many of the validating descriptions I cited were in English, German, or French, it is necessary to validate the names with a description in Latin. However, unlike the provisions relative to the valid publication of names at and below the rank of family (Art. 41), the Latin description for suprafamilial ranks can be taken from any rank as there are no provisions in the *Code* to the contrary. Accordingly, the following names are proposed again.

Actinidiales Takhtajan *ex* Reveal, *ord. nov.* based on the description of the type genus *Actinidia* J. Lindley by Bentham in Bentham & Hooker, *Gen. Pl.* 1:184. 1862; Actinidiaceae J. Hutchinson, 1926.

Cercidiphyllales H.-H. Hu *ex* Reveal, *ord. nov.* based on the description of type genus *Cercidiphyllum* Siebold & Zuccarini by Walpers in *Ann. Bot. Syst.* 1:364. 1848; Cercidiphyllaceae Engler, 1909.

Crossosomatales Takhtajan *ex* Reveal, *ord. nov.* based on the description of the type genus *Crossosoma* Nuttall by Bentham in Bentham & Hooker, *Gen. Pl.* 1:15. 1862; Crossosomataceae Engler, 1897.

Dioncophyllales Takhtajan *ex* Reveal, *ord. nov.* based on Dioncophyllaceae (Gilg) Airy Shaw in Kew Bull. 6:333. 1952. - T.: *Dioncophyllum* Baillon, *nom. cons.*

Eupteleales H.-H. Hu *ex* Reveal, *ord. nov.* based on the description of the type genus *Euptelea* Zuccarini by Hooker in Bentham & Hooker, *Gen. Pl.* 1:954. 1867; Eupteleaceae K. Wilhelm, 1910.

Hydrostachyales Diels *ex* Reveal, *ord. nov.* based on [Podostemaceae] subfam. ["subordo"] Hydrostachyoideae ["Hydrostachyeae"] Weddell in Alph. de Candolle, *Prodr.* 17:86. 1873. - T.: *Hydrostachys* Du Petit-Thouars; Hydrostachyaceae Engler, 1898.

Lactoridales Takhtajan *ex* Reveal, *ord. nov.* based on the description of the type genus *Lactoris* R.A. Philippi by Bentham in Bentham & Hooker, *Gen. Pl.* 3:127. 1880; Lactoridaceae Engler, 1888.

Salvadorales R. Dahlgren *ex* Reveal, *ord. nov.* based on the description of the type genus *Salvadora* Linnaeus by Endlicher, *Gen. Pl.* [15:]1141. 1840; Salvadoraceae J. Lindley (1836), *nom. cons.*

Welwitschiales C. Skottsberg *ex* Reveal, *ord. nov.* based on the description of the type genus *Welwitschia* J.D. Hooker, *nom. cons.*, by Bentham in Bentham & Hooker, *Gen. Pl.* 3:417, 418. 1880; Welwitschiaceae Markgraf, 1926.

Winterales A.C. Smith *ex* Reveal, *ord. nov.* based on [Magnoliaceae] trib. Wintereae Bentham in Bentham & Hooker, *Gen. Pl.* 1:17. 1862. - T.: *Wintera* J.A. Murray, *nom. illeg.* \equiv *Drimys* J.R. & G. Forster; Winteraceae R. Brown *ex* Lindley, 1830.

Continued work on ordinal names has revealed others that require validation since I accounted for several in 1992. Dr. Ruurd D. Hoogland has pointed out to me that most of the ordinal names proposed by Tieghem are not validly

published as they fall afoul of Ex. 6 in Art. 18. Although Tieghem used the termination "-ales", the names themselves were treated by Tieghem as French, and I accept Hoogland's recommendation that such names must be considered invalid.

Aspleniales Pichi Sermolli *ex* Reveal, *ord. nov.* based on [Filicaceae ("Filices")] D. Asplenieae ("Aspleniaceae") S.F. Gray, *Nat. Arr. Brit. Pl.* 2:11. 1821 - T.: *Asplenium* Linnaeus; Aspleniaceae Newman, 1840.

Blechnales Pichi Sermolli *ex* Reveal, *ord. nov.* based on [Filicaceae ("Filices")] trib. Blechneae ("Blechnaceae") C. Presl, *Epimel. Bot.* 103. 1851 [Abh. Königl. Böhm. Ges. Wiss. ser. 5, 6:463. 1851]. - T.: *Blechnum* Linnaeus; Blechnaceae (C. Presl) Copeland, 1947.

Byblidales Nakai *ex* Reveal, *ord. nov.* based on the original description of type genus *Byblis* R.A. Salisbury, *Parad. Lond.* 2: sub t. 95. 1808; Byblidaceae Domin, 1922.

Cephalotaxales Takhtajan *ex* Reveal, *ord. nov.* based on the original description of the type genus *Cephalotaxus* Siebold & Zuccarini *ex* Endlicher, *Gen. Pl. Suppl.* 2:27. 1842; Cephalotaxaceae Neger, 1907.

Dicksoniales Pichi Sermolli *ex* Reveal, *ord. nov.* based on [Filicaceae ("Filices")] trib. Dicksonieae ("Dicksoniaceae") C. Presl, Abh. Königl. Böhm. Ges. Wiss. ser. 4, 5: [= *Tent. Pterid.*] 133. 1836. - T.: *Dicksonia* L'Héritier.

Hymenophyllopsidales Pichi Sermolli *ex* Reveal, *ord. nov.* based on Hymenophyllopsidaceae Pichi Sermolli, *Webbia* 24:712. 1970. - T.: *Hymenophyllopsis* Goebel.

Icacinales Tieghem *ex* Reveal, *ord. nov.* based on [Olacaceae ("Olacineae")] trib. Icacineae Bentham, *Trans. Linn. Soc. London* 18:679. 1841. - T.: *Icacina* A.H.L. de Jussieu.

Loxsomatales Pichi Sermolli *ex* Reveal, *ord. nov.* based on Loxsomataceae C. Presl, *Gefässbündel Farrn* 31. 1847 [Abh. Königl. Böhm. Ges. Wiss. ser. 5, 5:339. 1848] ("Loxsomaceae"). - T.: *Loxsoma* R. Brown *ex* A. Cunningham, as "*Lozoma*".

Matoniales Pichi Sermolli *ex* Reveal, *ord. nov.* based on Matoniaceae C. Presl, *Gefässbündel Farrn* 32. 1847 [Abh. Königl. Böhm. Ges. Wiss. ser. 5, 5:340. 1848]. - T.: *Matonia* R. Brown *ex* Wallich.

- Myrothamnales** Nakai *ex* Reveal, *ord. nov.* based on the description of the type genus *Myrothamnus* Welwitsch by Hooker in Bentham & Hooker, *Gen. Pl.* 1:1005. 1867; Myrothamnaceae Niedenzu, 1891.
- Negripteridales** Pichi Sermolli *ex* Reveal, *ord. nov.* based on Negripteridaceae Pichi Sermolli, *Nuovo Giorn. Bot. Ital. ser. 2*, 53:160. 1946. - T.: *Negripteris* Pichi Sermolli.
- Plagiogyriales** Pichi Sermolli *ex* Reveal, *ord. nov.* based on the original description of *Plagiogyria* Mettenius, *Abhandl. Senkenb. Ges.* 2:265. 1858; Plagiogyriaceae Bower, 1926.
- Platyzomatales** Pichi Sermolli *ex* Reveal, *ord. nov.* based on Platyzomataceae Nakai, *Bull. Natl. Sci. Mus.* 29:4. 1950. - T.: *Platyzoma* R. Brown.
- Rhizophorales** Tieghem *ex* Reveal, *ord. nov.* based on Rhizophoraceae R. Brown in Flinders, *Voy. Terra Austral.* 2:549. 1814 ("Rhizophoreae"). - T.: *Rhizophora* Linnaeus.
- Sciadopityales** Takhtajan *ex* Reveal, *ord. nov.* based on the original description of the type genus *Sciadopitys* Siebold & Zuccarini, *Fl. Jap.* 2:1. 1842; Sciadopityaceae Luerssen, 1877.
- Stromatopteridales** Pichi Sermolli *ex* Reveal, *ord. nov.* based on [Gleicheniaceae] subfam. Stromatopteridoideae Nakai, *Bull. Natl. Sci. Mus.* 29:32. 1950. - T.: *Stromatopteris* Mettenius; Stromatopteridaceae (Nakai) Bierhorst, 1968.
- Tecophilaeales** Traub *ex* Reveal, *ord. nov.* based on Tecophilaeaceae F. Leybold, *Bonplandia* 10:370. 1862, *nom. cons.* - T.: *Tecophilaea* Bertero *ex* L.A. Colla.

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LITERATURE CITED

- Greuter, W., H.M. Burdet, W.G. Chaloner, V. Demoulin, R. Grolle, D.L. Hawksworth, D.H. Nicolson, P.C. Silva, F.A. Stafleu, E.G. Voss, & J. McNeill (editors.). 1988. *International Code of Botanical Nomenclature*, adopted by the Fourteenth International Botanical Congress, Berlin, July–August 1987. *Regnum Veg.* 118.
- Reveal, J.L. 1992. Validation of ordinal names of extant vascular plants. *Novon* 2:238-240.

NEW SUBCLASS AND SUPERORDINAL NAMES FOR EXTANT VASCULAR PLANTS

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ABSTRACT

One subclass and four superorders proposed by me in 1992 are validated here as the cited validating descriptions cited were not in Latin as required by Art. 36.1 of the *International Code of Botanical Nomenclature*. The new taxa are **Lamiidae**, **Eucommianae**, **Fab-anae**, **Theanae**, and **Zingiberanae**.

KEY WORDS: Magnoliophyta, subclass, superorder, nomenclature

In an article published in 1992, I attempted to validate numerous subclass and superordinal names now in current use but failed to follow all of the provisions in the *International Code of Botanical Nomenclature* (Greuter *et al.* 1988). Although all of the validating descriptions (Art. 32.1[c]) cited were validly published (Art. 32.3), I did not realize that Art. 36.1 mandated that after 1 Jan 1935, a name of a new taxon (not defined in the *Code* except partially in Art. 72.1[a]) must be accompanied by a reference to a previously and effectively published Latin description or diagnosis. As a few of the validating descriptions I cited were in English or German, it is necessary to validate the names with a description in Latin. However, unlike the provisions relative to the valid publication of names at and below the rank of family (Art. 41), the Latin description for suprafamilial ranks can be taken from any rank as there are no provisions in the *Code* to the contrary. Accordingly, the following names are proposed again.

Lamiidae Takhtajan *ex* Reveal, *subclass. nov.* based on Labiatae A.L. de Jussieu, *Gen. Pl.* 110. 1789, *nom. cons.* - T.: *Lamium* Linnaeus (1753); *Lamiaceae* Lindley (1836).

Eucommianae Takhtajan *ex* Reveal, *superord. nov.* based on the original description of the type genus *Eucommia* Oliver in Hooker's Icon. Pl. 20: t. 1950. 1890.

Fabanae R. Dahlgren *ex* Reveal, *superord. nov.* based on Class Leguminosae Endlicher, *Gen. Pl.* xlvii, 1253. 1841. – T.: *Faba* P. Miller (1754); Fabaceae Lindley (1836).

Theanae Thorne *ex* Reveal, *superord. nov.* based on Class Lamprophyllae Bartling, *Ord. Nat. Pl.* 225, 333. 1830. – T.: *Thea* Linnaeus (1753); Theaceae D. Don (1825).

Zingiberanae Takhtajan *ex* Reveal, *superord. nov.* based on Class Scitamineae Bartling, *Ord. Nat. Pl.* 24, 59. 1830. – T.: *Zingiber* G.R. Boehmer, *nom. cons.* (1760); Zingiberidaceae Lindley (1835).

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Thanks are extended to A.L. Takhtajan, B.E. Dutton, and J.H. Wiersema for reviewing the manuscript. Work on ordinal and plant family names in Europe was supported by National Science Foundation Grant BSR-8812816. This is Scientific Article A-6424, Contribution No. 8617, of the Maryland Agricultural Experiment Station and Cooperative Extension Service.

LITERATURE CITED

Greuter, W., H.M. Burdet, W.G. Chaloner, V. Demoulin, R. Grolle, D.L. Hawksworth, D.H. Nicolson, P.C. Silva, F.A. Stafleu, E.G. Voss, & J. McNeill (editors.). 1988. *International Code of Botanical Nomenclature*, adopted by the Fourteenth International Botanical Congress, Berlin, July–August 1987. *Regnum Veg.* 118.

Reveal, J.L. 1992. Validation of subclass and superordinal names in Magnoliophyta. *Novon* 2:235-237.

THE CORRECT NAME OF THE NORTHERN EXPRESSION OF *SARRACENIA PURPUREA* L. (SARRACENIACEAE)

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ABSTRACT

Due to a lectotypification, and an inability to conserve the name and type of a taxon that impacts upon infraspecific nomenclature, the correct name for the northern expression of *Sarracenia purpurea* L. is not var. *purpurea* as traditionally understood but var. *terrae-novae* de la Pylaie. The southern expression of the species, known as var. *venosa* (Raf.) Fernald, must now be named var. *purpurea*.

KEY WORDS: *Sarracenia*, Sarraceniaceae, nomenclature

One of the guiding principles of systematics is that taxonomy drives nomenclature, not the other way around. The example presented here is one of those instances where differences in taxonomic opinion and an unfortunate lectotypification have resulted in a conflicting nomenclature.

In 1840, Rafinesque (p. 33) divided Linnaeus' (1753:510) *Sarracenia purpurea* L. into two species, listing *S. gibbosa* Raf. (under the orthography, *Sarazina*) as a new name for *S. purpurea* and then appended *S. grandiflora* Raf. as an alternative for that. In doing so he established the concept that *S. purpurea* applied to a northern plant that occurred from Canada to Virginia. For the southern expression, Rafinesque proposed *S. venosa* Raf.; this, he said, grew from Virginia to Florida.

Sarracenia purpurea was regarded as a widespread, albeit variable species (save for the recognition of *S. heterophylla* A. Eaton at some infraspecific rank) until 1933 when Wherry recognized two subspecies, the northern subsp. *gibbosa* (Raf.) Wherry and the southern subsp. *venosa* (Raf.) Wherry. Fernald (1936:233) subsequently proposed var. *venosa*, and Wherry (1972:146) eventually corrected the name of the northern taxon to the autonym subsp. *purpurea*.

Recognition of two expressions within *Sarracenia purpurea* has not been uniformly accepted. Bell (1949) rejected the distinction, but it was accepted

by Fernald (1950), Gleason (1952), and Gleason & Cronquist (1963, 1991). In Canada, Rousseau (1974) and Taylor & MacBryde (1977) recognized var. *purpurea*, Scoggan (1978) the f. *purpurea*, and other authors (Scoggan 1957; Looman & Best 1979; Porsild & Cody 1980; Moss 1983; Hinds 1986) defined the range of *S. purpurea* so as to exclude that of the southern var. *venosa*. Authors of several recent southeastern United States floras (Radford *et al.* 1964; Duncan & Kartesz 1981; Clewell 1985) have not recognized var. *venosa*, although it was accepted by Murry & Urbatsch (1979). A distinction between the two has long been championed by Schnell (1976, 1979, 1981) and this was accepted by Kartesz & Kartesz (1980).

One of the mysteries associated with the Linnaean herbarium is the lack of Linnaeus' specimens of *Sarracenia*. There was a genus folder but no specimens when James E. Smith purchased the herbarium (Jackson 1907). Linnaeus likely had herbarium material since *S. purpurea* was collected by Kalm (UPS), and the plant had been in cultivation since the early 1600s (Juniper *et al.* 1989:14). Nonetheless, no original Linnaean herbarium material has ever been traced. (The Kalm sheet can not be considered original material as there is no evidence that Linnaeus examined the sheet.)

Without any available specimens, McDaniel (1971:26) lectotypified *Sarracenia purpurea* on a Catesby (1738: t. 70) plate of var. *venosa*, one of only two available elements from which a selection could be made, the other being the Plukenet (1705: t. 376, f. 6; voucher: H.S. 90:59, BM-SL) figure selected by Wherry (1933:2) as the neotype (as "type"; Art. 8.3; Greuter *et al.* 1988) of var. *venosa*. McDaniel, who did not distinguish varieties, recognized that because of his typification, the northern element, if such were distinguished, would have to be called var. *terrae-novae* de la Pylaie (1827:389); however, this name has not been adopted by any modern author.

Before urging the adoption of the de la Pylaie name, should one wish to distinguish between the two expressions, a conservation proposal was prepared and submitted for review by members of the Spermatophyte Committee in the hopes of being able to conserve the name and the type of *Sarracenia purpurea* on the northern expression represented by the Kalm sheet. The argument was that the infraspecific autonym *purpurea* "has been widely and persistently used for a taxon or taxa not including its type ..." (Art. 63) since 1971 when McDaniel lectotypified *S. purpurea* upon the southern var. *venosa*.

In this case, the effect on the rank of the taxon in question was not at the specific level, for which conservation was requested, but at an autonymic infraspecific rank, and then only when a taxonomic distinction is made between two expressions of questionable merit. In this case conservation is not possible as the type of the species (the southern expression) is still representative of the species, and therefore the specific name can not be considered under any provision in the current *Code* (Greuter *et al.* 1988) as *Sarracenia purpurea* has not been misapplied, only a variant of it has been misapplied.

If the proposal could have been adopted, the application of *Sarracenia purpurea* would have continued as currently understood in the popular (e.g., Cheers 1983; Slack 1986; McKeown 1991), garden (Hindle 1991), and technical systematic literature when the species is divided into a northern var. *purpurea* and a southern var. *venosa*. As such a proposal can not even be considered, the northern variant must be called var. *terra-novae* de la Pylaie, a name heretofore not taken up. If one were to recognize the taxon at the subspecific rank, a new combination is necessary.

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LITERATURE CITED

- Bell, C.R. 1949. A cytotaxonomic study of the Sarraceniaceae of North America. *J. Elias Mitchell Sci. Soc.* 65:137-166.
- Catesby, M. 1738. *The Natural History of Carolina, Florida and the Bahama Islands*. Vol. 2. Privately published, London, Great Britain.
- Cheers, G. 1983. *Carnivorous Plants*. Globe Press, Melbourne, Australia.
- Clewell, A.F. 1985. *Guide to the Vascular Plants of the Florida Panhandle*. University Presses of Florida, Tallahassee, Florida.
- Duncan, W.H. & M.B. Duncan. 1987. *The Smithsonian Guide to Seaside Plants of the Gulf and Atlantic Coasts*. Smithsonian Institution Press, Washington, D.C.
- & J.T. Kartesz. 1981. *Vascular Flora of Georgia*. University of Georgia Press, Athens, Georgia.
- Fernald, M.L. 1936. IX. Minor forms and transfers. *Rhodora* 38:233-236.
- . 1950. *Gray's Manual of Botany*, 8th ed. American Book Co., New York, New York, etc.

- Gleason, H. 1952. *The New Britton and Brown Illustrated Flora of the Northeastern United States and Adjacent Canada*. Lancaster Press, Lancaster, Pennsylvania.
- & A. Cronquist. 1963. *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*. Van Nostrand Co., New York, New York.
- . 1991. *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*. New York Botanical Garden, Bronx, New York.
- Greuter, W., H.M. Burdet, W.G. Chaloner, V. Demoulin, R. Grolle, D.L. Hawksworth, D.H. Nicolson, P.C. Silva, F.A. Stafleu, E.G. Voss, & J. McNeill (editors.). 1988. *International Code of Botanical Nomenclature*, adopted by the Fourteenth International Botanical Congress, Berlin, July–August 1987. *Regnum Veg.* 118.
- Hindle, A. 1991. *Sarracenia* species, sub-species and forms. *Carniv. Pl. Soc. J.* 15(1):18-20.
- Hinds, H.R. 1986. *The Flora of New Brunswick*. Primrose Press, Fredericton, New Brunswick.
- Jackson, B.D. 1907. On a manuscript list of the Linnaean herbarium in the handwriting of Carl von Linné. *Proc. Linn. Soc. London* 119:89-126.
- Juniper, B.E., R.J. Robins, & D.M. Joel. 1989. *The Carnivorous Plants*. Academic Press, London, Great Britain, etc.
- Linnaeus, C. 1753. *Species Plantarum*. Salvius, Stockholm, Sweden.
- Looman, J. & K.F. Best. 1979. *Budd's Flora of the Canadian Prairie Provinces*. Res. Branch Agric. Canada Publ. 1662.
- McDaniel, S. 1971. The genus *Sarracenia* (Sarraceniaceae). *Bull. Tall Timbers Res. Stat.* 9.
- McKeown, P. 1991. Seed bank report. *CPS News* 1991(2):4-6.
- Moss, E.H. 1983. *Flora of Alberta*, second edition revised by J.G. Packer. University of Toronto Press, Toronto, Canada.
- Murry, R.E., Jr. & L.E. Urbatsch. 1979. Preliminary reports on the flora of Louisiana. III. The families Droseraceae and Sarraceniaceae. *Castanea* 44:24-27.

- Plukenet, L. 1705. *Amaltheum Botanicum*. Privately published, London, Great Britain.
- Porsild, A.E. & W.J. Cody. 1980. *Vascular Plants of Continental Northwest Territories, Canada*. National Museums of Canada, Ottawa, Canada.
- Pylaie, M.B. de la. 1827. Du genre *Sarracenia* en famille, et description de la variété *S. purpurea*, croissant à l'île de Terre-Neuve. Mém. Soc. Linn. Paris 6:379-395.
- Rafinesque, C.S. 1840. *Autikon Botanikon*. Privately published, Philadelphia, Pennsylvania.
- Rousseau, G. 1974. *Géographie Floristique du Québec-Labrador*. University of Laval Press, Québec, Canada.
- Schnell, D.E. 1976. *Carnivorous Plants of the United States and Canada*. Blair, Winston-Salem, North Carolina.
- . 1979. A critical review of published variants of *Sarracenia purpurea*. *Castanea* 44:47-59.
- . 1981. *Sarracenia purpurea* L. ssp. *venosa* (Raf.) Wherry: Variations in the Carolinas coastal plain. *Castanea* 46:225-234.
- Scoggan, H.J. 1957. *Flora of Manitoba*. Natl. Mus. Canad. Bull. 140.
- . 1978. *The Flora of Canada*, Part 3 – Dicotyledoneae (Saururaceae to Violaceae). Natl. Mus. Nat. Sci. Publ. Bot. 7(3).
- Slack, A. 1986. *Insect-Eating Plants and How to Grow Them*. Aphabooks, Sherborne, England.
- Taylor, R.L. & B. MacBryde. 1977. *Vascular Plants of British Columbia*. Bot. Gard. Univ. British Columbia Techn. Bull. 4.
- Wherry, E.T. 1933. The geographic relations of *Sarracenia purpurea*. *Bartonia* 15:1-16.
- . 1972. Notes on *Sarracenia* subspecies. *Castanea* 37:146-147.

***STREPTOPUS LANCEOLATUS* (AITON) REVEAL, A NEW NAME FOR
STREPTOPUS ROSEUS MICHX. (CONVALLARIACEAE)**

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ABSTRACT

Solander (*in litt.*) proposed *Uvularia lanceolata* for Newfoundland specimens gathered by Banks in 1766. When formally published by Aiton in 1789, references were made to a 1635 Cornut illustration and a 1785 Menzies introduction. The name is lectotypified here on the Banks sheet annotated by Solander, a specimen of *Streptopus roseus* Michaux. The Aiton name is transferred to *Streptopus*, as *S. lanceolatus*, and three new infraspecific combinations are proposed. The name applied to the widespread expression, *S. roseus* variety *perspectus* Fassett, becomes a synonym of variety *lanceolatus*.

KEY WORDS: *Streptopus*, *Uvularia*, nomenclature, typification, Linnaeus

The identity of *Uvularia lanceolata* Aiton (1789:434) has long been doubtful. Authorship of the name is technically attributed to Aiton (Reveal 1985, 1990), but the name and description were proposed by one of his employees, Daniel Solander (1733-1782). Solander's premature death prevented many of his scientific names from being published under his own authorship, and Stafleu & Cowan (1985:721) list no independently authored books, although numerous Solander manuscripts are extant in the Department of Botany Library at The Natural History Museum (BM) in London (Diment & Wheeler 1984).

A review of Solander's notes and specimens at BM has shown that *Uvularia lanceolata* is the earliest available name for *Streptopus roseus* Michaux (1803:201).

In April, 1766, Joseph Banks (1743-1820) set out on his first foreign scientific expedition, traveling aboard the *Niger* to St. Johns, Newfoundland (Carter

1988:32). Banks kept a journal, and recorded therein many of his acquisitions. He collected numerous plant and animal specimens during his month-long (11 May–11 June 1766) stay at St. Johns. On 11 June the *Niger* sailed to Croque Harbor at the northeast tip of the island and lay at anchor for a week (13–19 June). At both sites, Banks collected specimens Solander later annotated *Uvularia lanceolata*.

In Solander's manuscript "slip catalogue" (vol. 8, p. 537, BM) is the following entry:

lanceolata UVULARIA foliis perfoliatis ova-
to lanceolatis acuminatis.

Polygonatum ramosum flore luteo
minuj. *Cornut. can. 40. t. 41. Moris. hist.*

Habitat in Terra Labrador America
septentrionalis

Differt ab *Uvularia perfoliata* 437.2 mscr
quod Caulis ~~majis~~ ramosior festicet a
singula ala, quod flores minore, &
quid folia angustiora & acuminata.

This entry was also included in Solander's unpublished 1767 manuscript, "Descriptions of plants from various parts of the world," copied from the slip catalogue by Herman Diedrich Spöring (Marshall 1978). On the slip is a large "L," which Marshall felt alluded to specimens in the Sloane herbarium (BM-SL), and a large "+" indicating that Solander included the name in Aiton's *Hortus Kewensis*.

I have been unable to find a specimen annotated by Solander with *Uvularia lanceolata* among the more than 300 volumes of dried plants in the Sloane herbarium, but one or more probably exist. Nonetheless, on two Banks sheets now in the general herbarium (BM), Solander wrote this manuscript name. No reference was made to the Banks specimens when the name was proposed in 1789, but under Article 7.4 (Greuter *et al.* 1988), they are still "original material" as Solander examined them prior to publication, and by annotating them with his binomial, he associated the two sheets with the concept of the named taxon.

When Aiton (1789) proposed the name he cited a Cornut (1635:36) name and figure (t. 37) in synonymy with the comment "Introd. 1785, by Mr. Archibald Menzies." The specimen illustrated by Cornut in all likelihood is *Uvularia grandiflora* J.E. Smith, but what Menzies introduced is less certain.

Archibald Menzies (1754–1842), best known as the surgeon-naturalist with Colnett and later Vancouver in the Pacific Northwest, was ship's surgeon aboard HMS *Assistance* on the Halifax station in 1785 and 1786. He was a correspondent of Banks, and no doubt sent Banks seeds; Menzies certainly gave Banks live plants when he returned to England in August, 1786 (Carter 1988:222). I have not found a specimen of either *Uvularia* or *Streptopus* that I can directly attribute to Menzies, nor a cultivated specimen that I can associate with any 1785 introduction. However, there is a Labrador specimen of *Streptopus*, mounted with the Banks collection from St. Johns, that I believe is the Menzies voucher. Lysaght (1971:321) mistakenly attributed the Labrador specimen to Banks, but Banks never collected this specimen in Labrador.

The correct application of the name *Uvularia lanceolata* has long been problematic. Pursh (1814:231) considered it to be the same as *U. grandiflora* whereas Baker (1880:462) placed it in synonymy under *U. perfoliata* Linnaeus. Wilbur (1963:186) expressed a "strong suspicion" that *U. lanceolata* was the first binomial for *U. grandiflora*, but the name "should remain unassigned until authentic specimens are discovered." The discovery Wilbur suggested has now been made, and as a result the following new combinations are required:

Streptopus lanceolatus* (Aiton) Reveal, *comb. nov. BASIONYM: *Uvularia lanceolata* Aiton, *Hort. Kew.* 1:434. 1789. TYPE: CANADA. Newfoundland: in woods near Croque, 13–19 June 1766, *Banks s.n.* (LECTOTYPE [here designated]: BM).

Streptopus roseus Michx. var. *perspectus* Fassett, *Rhodora* 37:109. 1935. TYPE: UNITED STATES. New Hampshire: under trees, floor of Tuckerman's Ravine, Mt. Washington, 27 June 1934, *Fassett 16422* (HOLOTYPE: WIS).

Streptopus roseus Michx. f. *giganteus* Fassett, *Rhodora* 37:110. 1935. TYPE: CANADA. Quebec: Ile Nue, Archipel de Mingan, 28 July 1926, *Victorin & Rolland 24396* (HOLOTYPE: MT).

Banks does not mention specifically in his journal as having collected *Streptopus lanceolatus* at Croque. Nonetheless, he annotated the lectotype "Newfoundland in woods near Croque," and in his list of plants gathered in 1766, there is an entry that reads (mss. p. 11) "*Uvularia Amplexifolia* Shady Places Croque S^t Johns".

The lectotype is the widespread phase of the species, which ranges from southern Labrador to the mountains of South Carolina, westward to southern Ontario and Michigan (Fernald 1906; Fassett 1935).

Three other combinations are necessary:

Streptopus lanceolatus (Aiton) Reveal var. *curvipes* (Vail) Reveal, *comb. nov.* BASIONYM: *Streptopus curvipes* Vail in Rydberg, Bull. Torrey Bot. Club 28:267. 1901. *Streptopus roseus* Michx. var. *curvipes* (Vail) Fassett, Rhodora 37:110. 1935. TYPE: CANADA. British Columbia: Asulkan Pass, 4,400 ft., June-July 1897, Z. W. Palmer s.n. (HOLOTYPE: NY).

Streptopus lanceolatus (Aiton) Reveal var. *longipes* (Fernald) Reveal, *comb. nov.* BASIONYM: *Streptopus longipes* Fernald, Rhodora 8:71. 1906. *Streptopus roseus* Michx. var. *longipes* (Fernald) Fassett, Rhodora 37:110. 1935. TYPE: UNITED STATES. Michigan: Marquett Co., Turin, 5 June 1901, Barlow s.n. (HOLOTYPE: GH).

Streptopus lanceolatus (Aiton) Reveal var. *roseus* (Michaux) Reveal, *comb. nov.* BASIONYM: *Streptopus roseus* Michaux, *Fl. Boreali-Amer.* 1:201, t. 18. 1803. *Uvularia rosea* (Michaux) Persoon, *Syn. Pl.* 1:360. 1805. *Hexorima dichotoma* Rafinesque, *Specchio* 1:193. 1814, *nom. illeg.* (Art. 63.1). TYPE: UNITED STATES. Carolina: mountains, Michaux s.n. (HOLOTYPE: P).

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LITERATURE CITED

- Aiton, W.B. 1789. *Hortus Kewensis*. 3 vols. G. Nicol, London, Great Britain.
- Baker, J.G. 1880. A synopsis of Colchicaceae and the aberrant tribes of Liliaceae. Bot. J. Linn. Soc. 17:405-510.
- Carter, H.B. 1988. *Sir Joseph Banks*. British Museum (Natural History), London, Great Britain.

- Cornut, J.P. 1635. *Canadensium Plantarum . . . Historia*. S. le Moyne, Paris, France.
- Diment, J.A. & A. Wheeler. 1984. Catalogue of the natural history manuscripts and letters by Daniel Solander (1733–1782), or attributed to him, in British collections. *Arch. Nat. Hist.* 11:457–488.
- Fassett, N.C. 1935. A study of *Streptopus*. *Rhodora* 37:88–113.
- Fernald, M.L. 1906. The genus *Streptopus* in eastern America. *Rhodora* 8:69–71.
- Greuter, W., H.M. Burdet, W.G. Chaloner, V. Demoulin, R. Grolle, D.L. Hawksworth, D.H. Nicolson, P.C. Silva, F.A. Stafleu, E.G. Voss, & J. McNeill (editors.). 1988. *International Code of Botanical Nomenclature*, adopted by the Fourteenth International Botanical Congress, Berlin, July–August 1987. *Regnum Veg.* 118.
- Lysaght, A.M. 1971. *Joseph Banks in Newfoundland and Labrador, 1766: His Diary, Manuscripts and Collections*. Faber & Faber, London, Great Britain.
- Marshall, J.B. 1978. The handwriting of Joseph Banks, his scientific staff and amanuenses. *Bull. Brit. Mus. (Nat. Hist.), Bot. Ser.* 6:1–85.
- Michaux, P.A. 1803. *Flora Boreali-Americana*. 2 Vols. C. Crapelet, Paris, France.
- Pursh, F. 1814. *Flora Americae Septentrionalis*. White, Cochrane, & Co., London, Great Britain.
- Reveal, J.L. 1985. Colonial Maryland plants in D.C. Solander's "Descriptions of plants from various parts of the world"—an unpublished 1767 manuscript. *Bartonia* 51:80–92.
- . 1990. Solander, Dryander or Aiton: Who is the author of *Clematis ochroleuca* and what is its type? *Bartonia* 56:20–22.
- Rydberg, P.A. 1901. Studies on the Rocky Mountain flora.—V. *Bull. Torrey Bot. Club* 28:266–284.
- Stafleu, F.A. & R.S. Cowan. 1985. *Taxonomic Literature*. Vol. V: Sal-Ste. *Regnum Veg.* 112.
- Wilbur, R.L. 1963. A revision of the North American genus *Uvularia* (Liliaceae). *Rhodora* 65:158–188.

ON THE VALID PUBLICATION OF *COLLINSIA VIOLACEA* NUTTALL (SCROPHULARIACEAE)

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ABSTRACT

Collinsia violacea was first proposed by Thomas Nuttall in an 1827 textbook; it was later published in an 1835 article in the Transactions of the American Philosophical Society. Subsequent authors have consistently attributed the name to the 1835 reference.

KEY WORDS: *Collinsia*, Scrophulariaceae, nomenclature

While reviewing the first edition of Thomas Nuttall's (1827) textbook for vascular plant family names, I chanced to spot in a paragraph on *Collinsia* the distinctive asterisk Nuttall used to denote new species. After describing the genus and *C. verna*, the type of the genus, Nuttall wrote:

A second, and very similar annual species is found on the banks of the

Arkansa, west of the Mississippi; which I propose to call *Collinsia* **violacea* from the peculiar hue of the corolla. In this species the capsule contains 8 to 12 seeds.

Nuttall described the flowers of *Collinsia verna* as "beautifully particolored, the upper lip being white, the lower a fine blue." In addition he said the capsule of *C. verna* contained "only 2 or 3 seeds." Clearly, the characterization of the flowers of *C. violacea* as violet and the notation that the capsule contains 8 to 12 seeds is sufficient to validate the name. The valid place of publication and type information is as follows:

Collinsia violacea Nuttall, *Intr. Bot.* 131. 1827. - LT.: "On the hills and upland woods of the Arkansas and Red Rivers," probably along the Poteau River above Fort Smith, Le Flore Co., Oklahoma, 26 Apr 1819, Nuttall s.n. (BM!), designated by Pennell (1935:293, as "Type", an Art. 8.4 lectotypification; see Greuter *et al.* 1988).

Pennell (1935) indicated that there was an "isotype" at PH, but I have not seen this sheet.

Until now, the authorship and place of publication for this name has been attributed (Newsom 1929; Pennell 1935) to a later article where Nuttall (1835:179) gave a full and detailed description. Both Newsom and Pennell allude to *Collinsia purpurea* Rafinesque (1824:85) as possibly being an earlier name for *C. violacea*. Pennell even lectotypifies the name on a Dr. Christian Miller "collection from the banks of the Wabash" River in Indiana, outside the known range of *C. violacea*.

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LITERATURE CITED

- Greuter, W., H.M. Burdet, W.G. Chaloner, V. Demoulin, R. Grolle, D.L. Hawksworth, D.H. Nicolson, P.C. Silva, F.A. Stafleu, E.G. Voss, & J. McNeill (editors.). 1988. *International Code of Botanical Nomenclature*, adopted by the Fourteenth International Botanical Congress, Berlin, July-August 1987. *Regnum Veg.* 118.
- Newsom, V.M. 1929. A revision of the genus *Collinsia* (Scrophulariaceae). *Bot. Gaz.* 87:260-301.
- Nuttall, T. 1827. *An Introduction to Systematic and Physiological Botany*. Hilliard, Gray, Little, and Wilkins, Boston, and Hilliard and Brown, Cambridge.

_____. 1835. Collections towards a flora of the Territory of Arkansas.
Trans. Amer. Philos. Soc. Philadelphia 5:139-160.

Pennell, F.W. 1935. The Scrophulariaceae of eastern temperate North America. Monogr. Acad. Nat. Sci. Philadelphia 1:1-650.

**AUTOMATICALLY TYPIFIED SUPERORDINAL AND ORDINAL NAMES FOR
THE FLOWERING PLANTS (MAGNOLIOPHYTA) AS RECOGNIZED BY
THORNE (1992) AND ARRANGED FOLLOWING THE PRINCIPLES OF
PRIORITY, AUTONYMY, AND THE SUBSTITUTION OF ALTERNATIVE
NAMES**

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ABSTRACT

Using the most recent system of classification for flowering plants (Magnoliophyta) proposed by Thorne (1992), superordinal and ordinal names and their synonyms are arranged according to the principles of priority, autonymy, and the substitution of alternative names.

KEY WORDS: Magnoliophyta, nomenclature, classification, ordinal names

INTRODUCTION

Names above the rank of family are not subject to the rules of priority (Art. 11.4; Greuter *et al.* 1988). Nonetheless, Thorne (1992) has attempted to apply priority to ordinal names starting with Lindley (1833) even though he was aware that the majority of the names proposed by Lindley had been validly published by Dumortier (1829) four years earlier. The list of names presented below follows Thorne's classification scheme, but adopts a modified principle of priority and the notion of autonymy. The concept of substituting alternative names at the family level (Art. 18.5) is applied to superordinal and ordinal names. Also, I have retained technically illegitimate ordinal and superordinal names if the formerly illegitimate family name upon which they were based has been conserved (see App. IIB).

Thorne (1992) adopted the concept of autonoms for ordinal names even though this is not mandated by the present *Code* for names above the rank

of family. Thus, he took up Magnoliales (1838) rather than the earlier Laurales (1826) within Magnolianaes. I have maintained this principle. Finally, an ordinal name is adopted only if the family name itself is accepted either because a particular family name is conserved (*e.g.*, Saxifragales [1829] over Sedales [1828]) or because of a taxonomic decision (*e.g.*, Asparagales [1838] over Asteliales [1829]). A series of footnotes is appended to the end of the catalogue justifying why a particular name was adopted, or noting names accepted here which are different from those given by Thorne.

The purpose of this exercise is to ascertain the nomenclatural affect of priority on names at the rank of order. If the concept of "names in current use" (Greuter 1991; Hawksworth 1991) is added to the *Code* at the forthcoming International Botanical Congress, then perhaps, in time, this concept can be expanded to include names above the rank of family. Having concentrated recently on vascular plant nomenclature at the family rank and above, I can attest to the difficulty of finding the earliest places of valid publication for these names. Rules in the *Code* are vague for names above the rank of family and will require some revision.

Thorne's (1992) treatment is particularly useful for this nomenclatural experiment in that he recognized fewer superorders and orders than his contemporaries, thereby making the impact of priority more significant on a case-by-case basis. By adopting the principle of priority, but considering it secondary to the principle of autonymy, and then accepting the principle that ordinal names based on alternative family names have equivalent priority as their alternative ordinal names, there is only minimal nomenclatural disruption. The most unfortunate name changes encountered using Thorne's (1992) recent system of classification is that Dioscoreales (1876) must be replaced by Taccales (1829). Problems such as these can be addressed by conservation and/or the establishment of a names in current use list for ordinal names. In short, priority has little significant nomenclature impact upon the established nomenclature of ordinal names.

A catalogue of ordinal names with their full citation is now in its final stages of preparation and review. It is requested that additional names and/or corrections to the dates of publication given here be forwarded to me.

CATALOGUE OF SUPERORDINAL AND ORDINAL NAMES

I. Magnolianaes Takhtajan, 1967

Nelumbonanaes Takhtajan *ex* Reveal, 1992

Ranunculanaes Takhtajan *ex* Reveal, 1992

1. Magnoliales Bromhead, 1838¹

Laurales Perleb, 1826

Aristolochiales Dumortier, 1829

Gyrocarpales Dumortier, 1829

Monimiales Dumortier, 1829

Piperales Dumortier, 1829
Annonales Lindley, 1833
Calycanthales C. Martius, 1835
Asarales Burnett, 1835
Canellales Cronquist, 1957
Illiciales H.H. Hu *ex* Cronquist,
 1981

Austrobaileyales Takhtajan *ex*
 Reveal, 1992

Chloranthales Conzatti & L.C.
 Smith *ex* Reveal, 1992

Eupomatiales Takhtajan *ex* Re-
 veal, 1992

Lactoridales Takhtajan *ex* Re-
 veal, 1993

Winterales A.C. Smith *ex* Re-
 veal, 1993

2. *Ceratophyllales* Bischoff,
 1840

3. *Nelumbonales* Burnett, 1835

4. *Paeoniales* Heintze, 1927
Glaucidiales Takhtajan *ex* Re-
 veal, 1992

5. *Berberidales* Dumortier, 1829
Podophyllales Dumortier, 1829
Ranunculales Dumortier, 1829
Papaverales Dumortier, 1829
Menispermals Bromhead, 1838
Helleborales Nakai, 1949

II. *Nymphaeanae* Thorne *ex* Re-
 veal, 1992

6. *Nymphaeales* Dumortier,
 1829

Euryalales H.-L. Li, 1955

III. *Rafflesianae* Thorne *ex* Reveal,
 1992

7. *Rafflesiales* Oliver, 1895²
Cytinales Dumortier, 1829
Mitrastemonales Makino, 1911
Hydnorales Takhtajan *ex* Re-
 veal, 1992

IV. *Caryophyllanae* Takhtajan, 1967

8. *Caryophyllales* Perleb, 1826

Amaranthales Dumortier, 1829

Cactales Dumortier, 1829

Chenopodiales Dumortier, 1829

Nyctaginales Dumortier, 1829

Portulacales Dumortier, 1829

Scleranthales Dumortier, 1829

Petiveriales Lindley, 1833

Silenales Lindley, 1833

Dianthales Burnett, 1835

Atriplicales Horaninow, 1847

Opuntiales Willkomm, 1854

V. *Theanae* Thorne *ex* Reveal, 1992

Lecythidanae Takhtajan *ex* Re-
 veal, 1992

Nepenthanae Takhtajan *ex* Re-
 veal, 1992

Plumbaginanae Takhtajan *ex*
 Reveal, 1992

Polygonanae Takhtajan *ex* Re-
 veal, 1992

Primulanae R. Dahlgren *ex* Re-
 veal, 1992

Sarracenianae Thorne *ex* Re-
 veal, 1992

Dillenianae Takhtajan *ex* Re-
 veal & Takhtajan, 1993

9. *Theales* Lindley, 1833³

Hypericales Dumortier, 1829

Nepenthales Dumortier, 1829

Camelliales Burnett, 1835

Illicales Burnett, 1835

Sarraceniales Bromhead, 1838

Aquifoliales Senft, 1856

Elatiniales Nakai, 1949

Dilleniales Hutchinson, 1924

Medusagynales Brenan, 1952

Lecythidales Cronquist, 1957

Ancistrocladales Takhtajan *ex*
 Reveal, 1992

Actinidiales Takhtajan *ex* Re-
 veal, 1993

Dioncophyllales Takhtajan *ex*
 Reveal, 1992

- Ochnales* Hutchinson *ex* Reveal, 1993
Paracryphiales Takhtajan *ex* Reveal, 1992
10. **Ericales** Dumortier, 1829
Vacciniales Dumortier, 1829
Rhodorales Horaninow, 1847
Empetrals Nakai, 1930
 11. **Fouquieriales** Takhtajan *ex* Reveal, 1992
 12. **Styracales** Burnett, 1835
Sapotales J.D. Hooker *in* W.H. Harvey, 1868
Diospyrales Prantl, 1874
Ebenales Engler, 1892
 13. **Primulales** Dumortier, 1829
Samolales Dumortier, 1829
Plumbaginales Lindley, 1833
Myrsinales Bromhead, 1838
 14. **Polygonales** Dumortier, 1829
Rumticales Burnett, 1835
- VI. **Celastranae** Takhtajan, 1967
15. **Celastrales** Baskerville, 1839
- VII. **Malvanae** Takhtajan, 1967
Euphorbianae Takhtajan *ex* Reveal, 1992
Rhamnanae Takhtajan *ex* Reveal, 1992
Urticanae Takhtajan *ex* Reveal, 1992
16. **Malvales** Dumortier, 1829
Tiliales Hutchinson, 1924
 17. **Urticales** Dumortier, 1829
Ficales Dumortier, 1829
Ulmales Lindley, 1833
 18. **Barbeyales** Takhtajan *ex* Reveal & Takhtajan, 1993
 19. **Rhamnales** Dumortier, 1829
Elaeagnales Bromhead, 1838
 20. **Euphorbiales** Lindley, 1833
Daphnales Lindley, 1833
Crotonales Horaninow, 1847
Thymelaeales Willkomm, 1854
- Pandales* Engler & Gilg, 1912-1913
Simmondsiales Reveal, 1992
- VIII. **Violanae** R. Dahlgren *ex* Reveal, 1992
21. **Violales** Perleb, 1826
Cistales Reichenbach, 1828
Begoniales Dumortier, 1829
Cucurbitales Dumortier, 1829
Datiscales Dumortier, 1829
Passiflorales Dumortier, 1829
Samydales Dumortier, 1829
Turnerales Dumortier, 1829
Bizales Lindley, 1833
Salicales Lindley, 1833
Homaliales Bromhead, 1838
Lacistematales Baskerville, 1839
Tamaricales Hutchinson, 1924
Flacourtiates Heintze, 1927
Caricales L. Benson, 1957
 22. **Brassicales** Bromhead, 1838⁴
Resedales Dumortier, 1829
Capparales Hutchinson, 1924
Tovariales Nakai, 1943
Salvadorales R. Dahlgren *ex* Reveal, 1993
 23. **Batales** Engler, 1907
- IX. **Santalanae** Thorne *ex* Reveal, 1992
Balanophoranae R. Dahlgren *ex* Reveal, 1992
24. **Santalales** Dumortier, 1829
Anthobolales Dumortier, 1829
Loranthales Dumortier, 1829
Olacales Bentham, 1862
Medusagynales Brenan, 1952
 25. **Balanophorales** Dumortier, 1829
Cynomoriales Burnett, 1835
- X. **Geranianae** Thorne *ex* Reveal, 1992
26. **Linales** Baskerville, 1839
 27. **Rhizophorales** Tieghem

- ex* Reveal, 1993
28. **Geraniales** Dumortier, 1829
Balsaminales Lindley, 1833
Oxalidales Heintze, 1927
Limnanthales Nakai, 1930
Tropaeolales Takhtajan *ex* Reveal, 1992
29. **Polygalales** Dumortier, 1829
Vochysiales Dumortier, 1829
Malpighiales C. Martius, 1835
- XI. **Rutanae** Takhtajan, 1967
Fabanae R. Dahlgren *ex* Reveal, 1992
30. **Rutales** Perleb, 1826⁵
Papilionales Batsch, 1802
Citrales Dumortier, 1829
Sapindales Dumortier, 1829
Terebinthales Dumortier, 1829
Acerales Lindley, 1833
Coriariales Lindley, 1833
Meliales Lindley, 1833
Connarales Burnett, 1835
Lotales Burnett, 1835
Mimosales Burnett, 1835
Aesculales Bromhead, 1838
Fabales Bromhead, 1838
Burserales Baskerville, 1839
Cassiales Horaninow, 1847
Leitneriales Engler, 1897
Julianales Engler, 1907
Moringales Nakai, 1943
- XII. **Proteanae** Takhtajan, 1967
31. **Proteales** Dumortier, 1829
- XIII. **Rosanae** Takhtajan, 1967
Hamamelidanae Takhtajan, 1967
Juglandanae Takhtajan *ex* Reveal, 1992
Podostemonanae R. Dahlgren *ex* Reveal, 1992
Trochodendranae Takhtajan *ex* Reveal, 1992
32. **Hamamelidales** Grisebach, 1854
- Trochodendrales* Takhtajan *ex* Cronquist, 1981
- Cercidiphyllales* H.-H. Hu *ex* Reveal, 1993
- Eupteleales* H.-H. Hu *ex* Reveal, 1993
33. **Casuarinales** Lindley, 1833
34. **Balanopales** Engler, 1897
Didymelales Takhtajan, 1967
Daphniphyllales Pulle *ex* Cronquist, 1981
Buzales Takhtajan *ex* Reveal, 1992
35. **Bruniales** Dumortier, 1829
Roridulales Nakai, 1943
Geissolomatales Takhtajan *ex* Reveal, 1992
Hydrostachyales Diels *ex* Reveal, 1993
Myrothamnales Nakai *ex* Reveal, 1993
36. **Juglandales** Dumortier, 1829
Myricales Engler, 1897
Rhoipteleales Novák *ex* Reveal, 1992
37. **Betulales** Burnett, 1835⁶
Corylales Dumortier, 1829
Quercuales Burnett, 1835
Fagales Engler, 1892
38. **Rosales** Perleb, 1826
Sanguisorbales Dumortier, 1829
Crossosomatales Takhtajan *ex* Reveal, 1993
39. **Saxifragales** Dumortier, 1829⁷
Sedales Reichenbach, 1828
Crassulales Lindley, 1833
Grossulariales Lindley, 1833
Droserales Grisebach, 1854
Diapensiales Engler & Gilg, 1924
Cephalotales Nakai, 1943
Parnassiales Nakai, 1943
Stylidiales Takhtajan *ex* Reveal, 1992

40. **Podostemales** Lindley, 1833⁸
Marathrales Dumortier, 1829
41. **Cunoniales** Hutchinson, 1924
- XIV. **Aralianae** Takhtajan, 1967⁹
Cornanae Thorne *ex* Reveal, 1992
Eucommianae Takhtajan *ex* Reveal, 1992
Vitanae Takhtajan *ex* Reveal, 1992
42. **Brexiales** Lindley, 1833¹⁰
Hortensiales Grisebach, 1854
Hydrangeales Nakai, 1943
43. **Cornales** Dumortier, 1829
Vitales Burnett, 1835
Haloragales Bromhead, 1838
Garryales Lindley, 1846
Eucommiales Nemejc *ex* Cronquist, 1981
Aralidiales Takhtajan *ex* Reveal, 1992
Gunnerales Takhtajan *ex* Reveal, 1992
44. **Pittosporales** Lindley, 1833
Byblidales Nakai *ex* Reveal, 1993
45. **Araliales** Burnett, 1835
Angelicales Burnett, 1835
Ammiales J.K. Small, 1903
Apiales Nakai, 1930
Torricelliales Takhtajan *ex* Reveal, 1992
46. **Dipsacales** Dumortier, 1829
Viburnales Dumortier, 1829
Caprifoliales Lindley, 1833
Valerianales Burnett, 1835
Lonicerales C. Baenitz, 1877
Adoxales Nakai, 1949
- XV. **Asteranae** Takhtajan, 1967
Campanulanae Takhtajan *ex* Reveal, 1992
47. **Asterales** Lindley, 1833¹¹
Ambrosiales Dumortier, 1829
Calycerales Burnett, 1835
- Carduales* J.K. Small, 1903
48. **Campanulales** Reichenbach, 1828
Brunoniales Lindley, 1833
Goodeniales Lindley, 1833
- XVI. **Solananae** R. Dahlgren *ex* Reveal, 1992
49. **Solanales** Dumortier, 1829
Boraginales Dumortier, 1829
Convolvulales Dumortier, 1829
Nolanales Lindley, 1833
Polemoniales Bromhead, 1838
Echiales Lindley, 1846
- XVII. **Loasanae** R. Dahlgren *ex* Reveal, 1992
50. **Loasales** Bessey, 1907
- XVIII. **Myrtanae** Takhtajan, 1967
51. **Myrtales** Reichenbach, 1828
Onagrales Reichenbach, 1828
Penaeales Lindley, 1833
Oenotherales Bromhead, 1838
Combretales Baskerville, 1839
Lythrales Oliver, 1895
Melastomatales Oliver, 1895
- XIX. **Lamianae** Takhtajan, 1967¹²
Gentiananae Thorne *ex* Reveal, 1992
52. **Rubiales** Dumortier, 1829
Asclepiadales Dumortier, 1829
Cinchonales Lindley, 1833
Gentianales Lindley, 1833
Loganiales Lindley, 1833
Apocynales Bromhead, 1838
Galiales Bromhead, 1838
Vincales Horaninow, 1847
Chironiales Grisebach, 1854
Theligonales Nakai, 1942
53. **Lamiales** Bromhead, 1838¹³
Callitrichales Dumortier, 1829
Gesneriales Dumortier, 1829
Globulariales Dumortier, 1829
Jasminales Dumortier, 1829
Pinguicularales Dumortier, 1829

- Rhinanthales* Dumortier, 1829
Veratrales Dumortier, 1829
Acanthales Lindley, 1833
Bignoniales Lindley, 1833
Lentibulariales Lindley, 1833
Oleales Lindley, 1833
Plantaginales Lindley, 1833
Scrophulariales Lindley, 1833
Hippuridales Burnett, 1835
Menthales Burnett, 1835
Ligustrales Bischoff, 1840
Verbenales Horaninow, 1847
- IX. Lillianaes** Takhtajan, 1967
54. *Liliales* Perleb, 1826
Colchicales Dumortier, 1829
Iridales Dumortier, 1829
Paridales Dumortier, 1829
Ixiales Lindley, 1836
Alstroemeriales Hutchinson, 1934
Melanthiales R. Dahlgren *ex* Reveal, 1992
55. *Burmanniiales* Heintze, 1927
56. *Asparagales* Bromhead, 1838¹⁴
Asteliales Dumortier, 1829
Narcissales Dumortier, 1829
Amaryllidales Bromhead, 1840
Agavales Hutchinson, 1934
Alliales Traub, 1972
Hanguanales R. Dahlgren *ex* Reveal, 1992
Velloziales R. Dahlgren *ex* Reveal, 1992
57. *Taccales* Dumortier, 1829¹⁵
Tamales Dumortier, 1829
Smilacales Lindley, *Niz. Pl.* 23. 1833
Dioscoreales J.D. Hooker, 1876
58. *Orchidales* Dumortier, 1829
- XI. Hydatellanaes** Takhtajan *ex* Reveal, 1992
59. *Hydatellales* Cronquist *in* Takhtajan, 1980
- XXII. Triuridanaes** Thorne *ex* Reveal, 1992
60. *Triuridales* J.D. Hooker *in* Le Maout & Decaisne, 1876
- XXIII. Alismatanaes** Takhtajan, 1967
Butomanaes Takhtajan *ex* Reveal, 1992
Najadanaes Takhtajan *ex* Reveal, 1992
61. *Alismatales* Dumortier, 1829¹⁶
Najadales Reichenbach, 1828
Hydrocharitales Dumortier, 1829
Butomales Hutchinson, 1934
Vallisneriales Nakai, 1949
Elodeales Nakai, 1950
62. *Potamogetonales* Dumortier, 1829
Aponogetonales Hutchinson, 1934
Juncaginiales Hutchinson, 1934
Cymodoceales Nakai, 1943
Posidoniales Nakai, 1943
Zosteriales Nakai, 1943
Ruppiales Nakai, 1950
Scheuchzeriales B. Boivin, 1956
- XXIV. Aranaes** Thorne *ex* Reveal, 1992
Cyclanthanaes Thorne *ex* Reveal, 1992
63. *Arales* Dumortier, 1829
64. *Cyclanthales* Nakai, 1930
65. *Acorales* Burnett, 1835
- XXV. Pandananaes** Thorne *ex* Reveal, 1992
66. *Pandanales* Lindley, 1833
- XXVI. Arecanaes** Takhtajan, 1967
67. *Arecales* Bromhead, 1840¹⁷
Phoenicales Burnett, 1835.
Cocosales Nakai, 1930
- XXVII. Commelinanaes** Takhtajan, 1967
Bromelianaes R. Dahlgren *ex* Reveal, 1992
Juncanaes Takhtajan, 1967

- Pontederianae* Takhtajan *ex* Reveal, 1992
Typhanae Thorne *ex* Reveal, 1992
Zingiberanae Takhtajan *ex* Reveal, 1992
68. **Bromeliales** Dumortier, 1829
 69. **Philydrales** Dumortier, 1829
Pontederiales J.D. Hooker, 1876
Haemodorales Hutchinson, 1934
 70. **Typhales** Dumortier, 1829
 71. **Cannales** Dumortier, 1829¹⁸
Amomales Lindley, 1833
Musales Burnett, 1835
- Zingiberales* Grisebach, 1854
 72. **Commelinales** Dumortier, 1829
Ephemerales Burnett, 1835
Xyridales Lindley, 1846
Eriocaulales Nakai, 1930
Mayacaes Nakai, 1943
 73. **Juncuales** Dumortier, 1829
Cyperales Burnett, 1835
 74. **Poales** Burnett, 1835
Graminales Dumortier, 1829
Avenales Bromhead, 1838
Restionales Perleb, 1838

NOTES

¹ The later Magnoliales (1838) is adopted over Laurales (1826) according to the principle of autonymy.

² The later Rafflesiales (1895) is adopted over Cytinales (1829) according to the principle of autonymy.

³ The later Theales (1833) is adopted over the earlier Hypericales (1829) and Nepenthales (1829) according to the principle of autonymy.

⁴ Brassicales (1838) is adopted over Resedales (1829) as Brassicales is considered to be an alternative name for the descriptive ordinal name, Cruciferae proposed by Perleb in 1826.

⁵ Rutales (1826) is retained over the earlier Papilionales (1802) according to the principle of autonymy.

⁶ Thorne used Betulales (1835), a later name than Corylales (1829), but as he did not accept Corylaceae, this name being rejected if combined with Betulaceae (App. IIB; Greuter *et al.* 1988), Betulales is retained.

⁷ Saxifragales (1829) is retained, rather than Sedales (1828) because Thorne did not accept Sedaceae.

⁸ Podostemales (1833) is retained, rather than Marathrales (1829) because Thorne did not accept Marathraceae.

⁹ Aralianae (1967) has priority over Cornanae (1992), the name adopted by Thorne.

¹⁰ Brexiales (1833) has priority over Hydrangeales (1943), the name adopted by Thorne.

¹¹ Asterales (1833) is adopted, rather than Ambrosiales (1829), according to the principle of autonymy and because Asteraceae is conserved over Ambrosiaceae (App. IIB; Greuter *et al.* 1988).

¹² Lamianae (1967) has priority over Gentiananae (1992), the name adopted by Thorne.

¹³ Lamiales (1838) is adopted over other competing names proposed in 1829 as Lamiales is an autonym of Lamianae. It may also be retained because Lamiales is an alternative name for the descriptive ordinal name, Labiatae, proposed by Dumortier in 1829. In any case, Scrophulariales (1833), adopted by Thorne, is a latter name.

¹⁴ Asparagales (1838) is retained, rather than Asteliales (1829) because Thorne did not accept Asteliaceae.

¹⁵ Taccales (1829) has priority over both Smilacales (1833) and Dioscoreales (1876). The latter name was adopted by Thorne.

¹⁶ The later Alismatales (1829) is adopted over Najadales (1828) according to the principle of autonymy.

¹⁷ Arecales (1840) is adopted over Phoenicales (1835) because Arecales is considered to be an alternative name for the descriptive ordinal name, Palmae, proposed by Perleb in 1826, and Phoenicaceae was not accepted by Thorne.

¹⁸ Cannales (1829) has priority over Zingiberales (1854), the name adopted by Thorne, as does Musales (1835).

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LITERATURE CITED

- Dumortier, B.C.J. 1829. *Analyse des Familles des Plantes*. J. Casterman, Tournay, France.
- Greuter, W. 1991. Proposals to amend the Code, and report of Special Committee 6B: Provisions for granting nomenclatural protection to listed names in current use. *Taxon* 40:669-677.

- Greuter, W., H.M. Burdet, W.G. Chaloner, V. Demoulin, R. Grolle, D.L. Hawksworth, D.H. Nicolson, P.C. Silva, F.A. Stafleu, E.G. Voss, & J. McNeill (editors.). 1988. *International Code of Botanical Nomenclature*, adopted by the Fourteenth International Botanical Congress, Berlin, July–August 1987. *Regnum Veg.* 118.
- Hawksworth, D.L. (ed.). 1991. *Improving the Stability of Names: Needs and Options*. *Regnum Veg.* 123.
- Lindley, J. 1833. *Nizus Plantarum*. Ridgway & Sons, London, Great Britain.
- Thorne, R.F. 1992. Classification and geography of the flowering plants. *Bot. Rev.* 58:225-348.

**A SPLITTER'S GUIDE TO THE HIGHER TAXA OF THE FLOWERING PLANTS
(MAGNOLIOPHYTA) GENERALLY ARRANGED TO FOLLOW THE SEQUENCE
PROPOSED BY THORNE (1992) WITH CERTAIN MODIFICATIONS**

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ABSTRACT

Using the most recent system of classification for flowering plants (Magnoliophyta) proposed by Thorne (1992b) and generally following his sequence of names but with the addition of the family names now in current use, a family system is proposed that purposefully splits the subclasses, superorders, orders, and families into small units thereby constructing a "splitter's" guide to the higher taxa of Magnoliophyta. The resulting classification recognizes 14 subclasses, 63 superorders, 248 orders, and 685 families.

KEY WORDS: Magnoliophyta, nomenclature, classification.

INTRODUCTION

Since 1959, considerable attention has been given to the classification of the flowering plants, with a large number of taxa recognized (Bedell & Reveal 1982a, b; Benson 1957; Boivin 1956; Brummitt 1992; Cronquist 1957, 1961, 1968, 1981, 1988; Cronquist *et al.* 1966; G. Dahlgren 1989a, b; R. Dahlgren 1975, 1980, 1983; R. Dahlgren & Bremer 1985; R. Dahlgren & Clifford 1982; R. Dahlgren *et al.* 1981, 1985; Deyl 1955; Dostál 1957; Ehrendorfer 1983; Engler 1964; Erdtman 1952, 1966; Gibbs 1974; Goldberg 1986, 1989; Gunn *et al.* 1992; Heywood 1978; Huber 1969; Hutchinson 1959, 1969, 1973; Kimura 1953, 1956; Mabberley 1987; Novák 1954, 1961; Pulle 1952; Rouleau 1981; Soó 1953, 1961, 1967; Stebbins, 1974; Takhtajan 1959, 1970, 1973, 1980, 1983, 1985, 1986, 1987; Thorne 1974, 1976, 1977, 1981, 1983, 1992a, 1992b; Willis 1973). Concomitant with this attention has been the realization that botanical

nomenclature ought to be stabilized as much as possible insofar as nomenclatural matters are concerned. As a result, the botanical community is now considering the concept of "names in current use" (NCU), and to that end, lists of proposed names have been circulated for comment in anticipation of a formal publication of protected names in early 1993.

My own efforts on this task have concentrated on vascular plant family names in collaboration with Dr. Ruurd D. Hoogland of the Laboratoire de Phanérogamie, Muséum National d'Histoire naturelle in Paris. To ascertain the taxonomic impact of protecting family names, we have worked closely with Richard K. Brummitt (K), the late Arthur Cronquist (NY), Aaron Goldberg (US), Armen L. Takhtajan (LE), Robert F. Thorne (RSA), and John Wiersema (USDA). To that end we have been able to resolve potential nomenclatural conflicts. The need to resolve the nomenclatural morass above the rank of family is no less important than that at the family rank and below, and while priority is not required above the rank of family, the need to have validly published names is mandated (Reveal 1992a, 1992b, 1993) and the need for a stabilized nomenclature even at these higher ranks is gradually being recognized.

In the following summary of the flowering plants (Magnoliophyta), I have adopted the general scheme proposed by Thorne (1992b), and included therein all of the proposed NCU family names. To this I have added class, subclass, superordinal, and ordinal names. I have adopted 1966 as the starting date for subclass and superordinal names, and 1789 as the starting date for ordinal and family names. To Thorne's linear arrangement of superorders, orders and families, I have added the rank of subclass used by Cronquist (1981) and Takhtajan (1987). Furthermore, as the family list accounts for all family names now in current use, I have also attempted to include all subclass, superordinal, and ordinal names now in current use. The philosophy behind the application of priority to these higher names is outlined elsewhere (Reveal 1993).

The consequences of adopting, or not adopting, the proposal put forth by Greuter (1991) regarding "names in current use" (NCU) are not all that serious insofar as flowering plant family names because so many of these names are already protected (Reveal & Hoogland, 1991). Conservation, as traditionally applied to flowering plant family names, has been to ensure that certain names are used instead of others, but not authorship or place of publication. Greuter's proposal would now protect the bibliographic information as well. Should the NCU proposals fail, we will have to editorially correct the authorship and/or bibliographic references of nearly 125 currently conserved family names on Appendix IIB of the *Code* (Greuter *et al.* 1988). And, as may be seen from the catalogue below, if the NCU proposals fail there will be a need to conserve at least ten additional names just to retain certain nonconserved names now in current use.

CATALOGUE OF THE HIGHER TAXA OF MAGNOLIOPHYTA

Magnoliophyta Cronquist, Takhtajan, & Zimmermann, 1966

Magnoliopsida Cronquist, Takhtajan, & Zimmermann, 1966

I. Magnoliidae Novák *ex* Takhtajan, 1967A. Magnoliana *ex* Takhtajan, 19671. Winterales A.C. Smith *ex* Reveal1. Winteraceae R. Brown *ex* Lindley, 1830, *nom. cons.*

2. Takhtajaniaceae (J. Leroy) J. Leroy, 1980

2. Illiciales H.-H. Hu *ex* Cronquist, 19813. Illiciaceae (Candolle) A.C. Smith, 1947, *nom. cons.*4. Schisandraceae Blume, 1830, *nom. cons.*

3. Magnoliales Bromhead, 1837

5. Magnoliaceae A.L. Jussieu, 1789, *nom. cons.*

6. Liriodendraceae Barkley, 1975

7. Degeneriaceae I. Bailey & A.C. Smith, 1942, *nom. cons.*8. Himantandraceae Diels, 1917, *nom. cons.*4. Eupomatiales Takhtajan *ex* Reveal, 19929. Eupomatiaceae Endlicher, 1841, *nom. cons.*

5. Annonales Lindley, 1833

10. Annonaceae A.L. Jussieu, 1789, *nom. cons.**Hornschuchiaceae* J. Agardh, 1858*Monodoraceae* J. Agardh, 1858

6. Aristolochiales Dumortier, 1829

Asarales Burnett, 183511. Aristolochiaceae A.L. Jussieu, 1789, *nom. cons.**Asaraceae* Ventenat, 179912. Myristicaceae R. Brown, 1810, *nom. cons.*

7. Canellales Cronquist, 1957

13. Canellaceae C. Martius, 1832, *nom. cons.**Winteranaceae* Warburg, 18958. Austrobaileyales Takhtajan *ex* Reveal, 199214. Austrobaileyaceae (Croizat) Croizat, 1943, *nom. cons.*

9. Monimiales Dumortier, 1829

15. Amborellaceae Pichon, 1948, *nom. cons.*16. Trimeniaceae (Janet R. Perkins & Gilg) Gibbs, 1917, *nom. cons.*

17. Hortoniaceae (Janet R. Perkins) A.C. Smith, 1971

18. Monimiaceae A.L. Jussieu, 1809, *nom. cons.*

19. Atherospermataceae R. Brown, 1814

20. Siparunaceae (A. de Candolle) Schodde, 1970

21. Gomortegaceae Reiche, 1896, *nom. cons.*

10. Calycanthales C. Martius, 1835

22. Idiospermaceae S.T. Blake,

- 1972
23. Calycanthaceae Lindley, 1819, *nom. cons.*
Chimonanthaceae Perleb, 1838
Butneriaceae Barnhart, 1895, *nom. illeg.*
11. Laurales Perleb, 1826
24. Lauraceae A.L. Jussieu, 1789, *nom. cons.*
Perseaceae Horaninow, 1834
25. Cassythaceae Bartling *ex* Lindley, 1833, *nom. cons.*
26. Hernandiaceae Blume, 1826, *nom. cons.*
Illigeraceae Blume, 1833
12. Gyrocarpales Dumortier, 1829
27. Gyrocarpaceae Dumortier, 1829.
13. Chloranthales Conzatti & L.C. Smith *ex* Reveal, 1992
28. Chloranthaceae Blume, 1827, *nom. cons.*
Hedyosmaceae Caruel, 1881
14. Lactoridales Takhtajan *ex* Reveal, 1992
29. Lactoridaceae Engler, 1888, *nom. cons.*
15. Piperales Dumortier, 1829
30. Saururaceae Richard *ex* E. Meyer, 1927, *nom. cons.*
31. Piperaceae C. Agardh, 1824, *nom. cons.*
32. Peperomiaceae A.C. Smith, 1981
- B. Nelumbonanae Takhtajan *ex* Reveal, 1992
16. Ceratophyllales Bischoff, 1840
33. Ceratophyllaceae Gray, 1821, *nom. cons.*
17. Nelumbonales Burnett, 1835
34. Nelumbonaceae (Candolle) Dumortier, 1829, *nom. cons.*
- C. Nymphaeanae Thorne *ex* Reveal, 1992
18. Nymphaeales Dumortier, 1829
Euryalales H.L. Li, 1955
35. Cabombaceae A. Richard, 1828, *nom. cons.*
Hydropeltidaceae (Candolle) Dumortier, 1822
36. Nymphaeaceae R.A. Salisbury, 1805, *nom. cons.*
37. Euryalaceae J. Agardh, 1858.
38. Barclayaceae H.L. Li, 1955
- D. Rafflesianae Thorne *ex* Reveal, 1992
19. Hydnorales Takhtajan *ex* Reveal, 1992
39. Hydnoraceae C. Agardh, 1821, *nom. cons.*
20. Mitrastemonales Makino, 1911
40. Mitrastemonaceae Makino, 1911, *nom. cons.*
21. Rafflesiales Oliver, 1895
Cytinales Dumortier, 1829
41. Cytinaceae (Brongniart) A. Richard, 1824
42. Apodanthaceae (R. Brown) Tieghem *ex* Takhtajan, 1987
43. Rafflesiaceae Dumortier, 1829, *nom. cons.*
- II. Ranunculidae Takhtajan *ex* Reveal, 1992
- E. Ranunculanae Takhtajan *ex* Reveal, 1992
22. Paeoniales Heintze, 1927
44. Paeoniaceae F. Rudolphi, 1830, *nom. cons.*
23. Glaucidiales Takhtajan *ex* Reveal, 1992
45. Glaucidiaceae Tamura, 1972
24. Menispermiales Bromhead, 1838

46. Menispermaceae A.L. Jussieu, 1789, *nom. cons.*
Pseliaceae Rafinesque, 1838
47. Lardizabalaceae Decaisne, 1839, *nom. cons.*
48. Sargentodoxaceae Stapf ex Hutchinson, 1926, *nom. cons.*
25. Podophyllales Dumortier, 1829
49. Podophyllaceae Candolle, 1821, *nom. cons.*
Diphylleaceae Schultz-Schultzenstein, 1832
50. Leonticaceae Berchtold & J. Presl, 1820
26. Berberidales Dumortier, 1829
51. Berberidaceae A.L. Jussieu, 1789, *nom. cons.*
52. Nandinaceae Horaninow, 1834.
27. Ranunculales Dumortier, 1829
Helleborales Nakai, 1949)
53. Hydrastidaceae Martinov, 1820.
54. Thalictaceae Rafinesque, 1815
55. Ranunculaceae A.L. Jussieu, 1789, *nom. cons.*
Anemonaceae Vest, 1818
Clematidaceae Martinov, 1820
56. Helleboraceae Vest, 1818
Calthaceae Martinov, 1820
Actaeaceae Rafinesque, 1828
Nigellaceae J. Agardh, 1858
57. Circaeasteraceae Hutchinson, 1926, *nom. cons.*
58. Kingdoniaceae A.S. Foster ex Airy Shaw, 1965
28. Papaverales Dumortier, 1829
59. Chelidoniaceae Martinov, 1820
60. Eschscholtziaceae Seringe, 1847
61. Papaveraceae A.L. Jussieu, 1789, *nom. cons.*
62. Platystemonaceae (W.R. Ernst) A.C. Smith, 1971
63. Pteridophyllaceae (Murbeck) Nakai ex Reveal & Hoogland, 1991
64. Hypecoaceae H.M. Willkomm & J.M.C. Lange, 1880
65. Fumariaceae Candolle, 1821, *nom. cons.*
Corydalaceae Giseke, 1792, *nom. illeg.*
- III. Caryophyllidae Takhtajan, 1967
 F. Caryophyllanae Takhtajan, 1967
29. Caryophyllales Perleb, 1826
Scleranthales Dumortier, 1829
Silenales Lindley, 1833
Dianthales Burnett, 1835
66. Alsinateae (Candolle) Bartling, 1825, *nom. cons.*
Stellariaceae Dumortier, 1822
67. Illecebraceae R. Brown, 1810, *nom. cons.*
Paronychiaceae A.L. Jussieu, 1815
- Scleranthaceae* Berchtold & J. Presl, 1820
Herniariaceae Martinov, 1820
68. Caryophyllaceae A.L. Jussieu, 1789, *nom. cons.*
Cerastiaceae Vest, 1818
Dianthaceae Vest, 1818
Ortegaceae Martinov, 1820
Telephiaceae Martinov, 1820
Saginaceae Sprengel ex Weinmann, 1824
Silenaceae (Candolle) Bartling, 1825
30. Portulacales Dumortier, 1829
69. Portulacaceae A.L. Jussieu, 1789, *nom. cons.*

- Montiaceae* Rafinesque, 1820
 70. *Hectorellaceae* Philipson & Skipworth, 1961
 71. *Basellaceae* Moquin-Tandon, 1840, *nom. cons.*
Anrederaceae J. Agardh, 1858
Ullucaceae Nakai, 1942
 72. *Didiereaceae* Drake, 1903, *nom. cons.*
 31. *Cactales* Dumortier, 1829
Opuntiales Willkomm, 1854
 73. *Cactaceae* A.L. Jussieu, 1789, *nom. cons.*
Opuntiaceae Martinov, 1820
Cereaceae Candolle & Sprengel, 1821
 32. *Nyctaginales* Dumortier, 1829
Petiveriales Lindley, 1833
 74. *Phytolaccaceae* R. Brown, 1818, *nom. cons.*
Sarcocaceae Rafinesque, 1837
 75. *Gisekiaceae* (Endlicher) Nakai, 1942
 76. *Petiveriaceae* C. Agardh, 1824
Rivinaceae C. Agardh, 1824
Hilleriaceae Nakai, 1942
Seguieriaceae Nakai, 1942
 77. *Agdestidaceae* Nakai, 1942
 78. *Barbeuiaceae* Nakai, 1942
 79. *Achatocarpaceae* Heimerl, 1934, *nom. cons.*
 80. *Stegnospermataceae* (A. Richard) Nakai, 1942
 81. *Nyctaginaceae* A.L. Jussieu, 1789, *nom. cons.*
Jalapaceae Batsch, 1802
Allioniaceae Horaninow, 1834
Bougainvilleaceae J. Agardh, 1858
Pisoniaceae J. Agardh, 1858
Mirabilidaceae W. Oliver, 1936
 82. *Aizoaceae* F. Rudolphi, 1830, *nom. cons.*
Ficoideaceae A.L. Jussieu, 1789
Galenaceae Rafinesque, 1819
Sesuvaceae Horaninow, 1834
 83. *Mesembryanthemaceae* Fenzl 1836
Mesembryaceae Dumortier, 1829, *nom. illeg.*
 84. *Tetragoniaceae* Nakai, 1942, *nom. cons.*
 85. *Halophytaceae* Soriano, 1984
 86. *Molluginaceae* Hutchinson, 1926, *nom. cons.*
Pharnaceaceae Martinov, 1820
Corrigiolaceae (Dumortier) Dumortier, 1829
Glinaceae Dumortier, 1829
Adenogrammaceae (Fenzl) Nakai 1942
Polpodaceae (Fenzl) Nakai, 1942
 33. *Chenopodiales* Dumortier, 1829
Atriplicales Horaninow, 1847
 87. *Dysphaniaceae* Pax, 1927, *nom. cons.*
 88. *Chenopodiaceae* Ventenat, 1799, *nom. cons.*
Atriplicaceae A.L. Jussieu, 1789
Corispermaceae Link, 1829
Betaceae Burnett, 1835
Blitaceae Adanson ex Post & Kuntze, 1903
 89. *Salicorniaceae* Martinov, 1820
 90. *Salsolaceae* Moquin-Tandon, 1849
 34. *Amaranthales* Dumortier, 1829
 91. *Amaranthaceae* A.L. Jussieu, 1789, *nom. cons.*
Celosiaceae Martinov, 1820
Achyranthaceae Rafinesque, 1837

- Gomphrenaceae* Rafinesque, 1837
Deeringiaceae J. Agardh, 1858
- IV. Dilleniidae Takhtajan *ex* Reveal & Takhtajan, 1993
- G. Dilleniaceae Takhtajan *ex* Reveal & Takhtajan, 1993
35. Dilleniales Hutchinson, 1924
92. Dilleniaceae R.A. Salisbury, 1807, *nom. cons.*
- Soramiaceae* Martinov, 1820
- Hibbertiaceae* J. Agardh, 1858
36. Actinidiales Takhtajan *ex* Reveal, 1992
93. Actinidiaceae Hutchinson, 1926, *nom. cons.*
94. Saurauaceae J. Agardh, 1858, *nom. cons.*
37. Paracryphiales Takhtajan *ex* Reveal, 1992
95. Paracryphiaceae Airy Shaw, 1965
- H. Theanae Thorne *ex* Reveal, 1992
38. Theales Lindley, 1833
- Camelliales* Burnett, 1835
96. Stachyuraceae J. Agardh, 1858, *nom. cons.*
97. Theaceae D. Don, 1825, *nom. cons.*
- Camelliaceae* Candolle, 1816
- Ternstroemiaceae* Mirbel *ex* Candolle, 1816
- Gordoniaceae* (Candolle) Sprengel, 1826
- Malachodendraceae* J. Agardh, 1858, *nom. illeg.*
98. Sladeniaceae (Gilg & Werdemann) Airy Shaw, 1965
99. Asteropeiaceae (Szyszlowicz) Takhtajan *ex* Reveal & Hoogland, 1990.
100. Tetrameristaceae Hutchinson, 1959
101. Pellicieraceae (Triana & Planchon) L. Beauvisage *ex* Bullock, 1959
102. Chrysobalanaceae R. Brown, 1818, *nom. cons.*
- Licaniaceae* Martinov, 1820
- Hirtellaceae* Horaninow, 1847
103. Symplocaceae Desfontaines, 1820, *nom. cons.*
104. Caryocaraceae Szyszlowicz, 1893, *nom. cons.*
- Rhizobolaceae* Candolle, 1824, *nom. illeg.*
105. Marcgraviaceae Choisy, 1824, *nom. cons.*
106. Oncothecaceae Kobuski *ex* Airy Shaw, 1965
39. Aquifoliales Senft, 1856
107. Aquifoliaceae Bartling, 1830, *nom. cons.*
- Illicaceae* Berchtold & J. Presl, 1820
108. Phellinaceae (Loesener) Takhtajan, 1967
109. Sphenostemonaceae P. Royen & Airy Shaw, 1972
40. Ochnales Hutchinson *ex* Reveal, 1992
110. Lophiraceae Loudon, 1830
111. Sauvagesiaceae (Gingins *ex* Candolle) Dumortier, 1829
112. Ochnaceae Candolle, 1811, *nom. cons.*
- Gomphiaceae* Candolle *ex* Schnizlein, 1843-1870
- Luxemburgiaceae* Tieghem *ex* Solereder, 1908
113. Quiinaceae Choisy *ex* Engler, 1888, *nom. cons.*
114. Scyttopetalaceae Engler, 1897, *nom. cons.*
- Rhaptopetalaceae* Tieghem *ex* Solereder, 1908
115. Strasburgeriaceae En-

- gler & Gilg, 1924, *nom. cons.*
41. Medusagynales Brenan, 1952
116. Medusagynaceae Engler & Gilg, 1924, *nom. cons.*
42. Ancistrocladales Takhtajan *ex* Reveal, 1992
117. Ancistrocladaceae Planchon *ex* Walpers, 1851, *nom. cons.*
43. Dioncophyllales Takhtajan *ex* Reveal, 1993
118. Dioncophyllaceae (Gilg) Airy Shaw, 1952, *nom. cons.*
44. Hypericales Dumortier, 1829
119. Bonnetiaceae (Bartling) L. Beauvisage *ex* Nakai, 1948
120. Clusiaceae Lindley, 1836, *nom. cons.*
- Guttiferae* A.L. Jussieu, 1789, *nom. cons.*; *nom. alt.*
- Garciniaceae* Bartling, 1830
- Cambogiaceae* Horaninow, 1834
- Calophyllaceae* J. Agardh, 1858
121. Hypericaceae A.L. Jussieu, 1789, *nom. cons.*
- Ascyraceae* Plenck, 1796
45. Elatinales Nakai, 1949
122. Elatinaceae Dumortier, 1829, *nom. cons.*
- Cryptaceae* Rafinesque, 1820
- Alsinastaceae* Ruprecht *ex* Burbani, 1901
- I. Nepenthanae Takhtajan *ex* Reveal, 1992
46. Nepenthales Dumortier, 1829
123. Nepenthaceae Dumortier, 1829, *nom. cons.*
- J. Lecythidanae Takhtajan *ex* Reveal, 1992
47. Lecythidales Cronquist, 1957
124. Barringtoniaceae F. Rudolphi, 1830, *nom. cons.*
125. Foetidaceae (Nidenzu) Airy Shaw, 1965
126. Napoleonaeaceae A. Richard, 1827
- Belvisiaceae* R. Brown, 1821, *nom. illeg.*
127. Lecythidaceae Poiteau, 1825, *nom. cons.*
- Gustaviaceae* Burnett, 1835
128. Asteranthaceae Knuth, 1939, *nom. cons.*
- K. Sarracenianae Thorne *ex* Reveal, 1992
48. Sarraceniales Bromhead, 1838
129. Sarraceniaceae Dumortier, 1829, *nom. cons.*
- 129a. HeliampHORACEAE Chrtak, Slavíková, & Studická, 1992
- L. Ericanae Takhtajan, 1967
49. Ericales Dumortier, 1829
- Vacciniales* Dumortier, 1829
130. Pentaphylacaceae Engler, 1897, *nom. cons.*
131. Clethraceae Klotzsch, 1851, *nom. cons.*
132. Cyrillaceae Endlicher, 1841, *nom. cons.*
133. Ericaceae A.L. Jussieu, 1789, *nom. cons.*
- Rhododendraceae* A.L. Jussieu, 1789
- Rhodoraceae* Ventenat, 1799
- Azaleaceae* Vest, 1818
- Ledaceae* Link, 1821
- Menziesiaceae* Klotzsch, 1851
- Salazidaceae* J. Agardh, 1858
- Diplarchaceae* Klotzsch, 1860
134. Vacciniaceae Candolle *ex* Gray, 1821, *nom. cons.*
- Andromedaceae* (Endlicher) Schneizlein, 1843-1870
- Siphonandraceae* Klotzsch, 1851, *nom. illeg.*
- Arbutaceae* J. Agardh, 1858

- Arctostaphylaceae* J. Agardh, 1858
 135. *Pyrolaceae* Dumortier, 1829, *nom. cons.*
 136. *Monotropaceae* Nuttall, 1818, *nom. cons.*
Hypopityaceae Link, 1829
 137. *Epacridaceae* R. Brown, 1810, *nom. cons.*
Stypheliaceae Horaninow, 1834
 138. *Prionotaceae* Hutchinson, 1969
 50. *Empetrales* Nakai, 1930
 139. *Empetraceae* Gray, 1821, *nom. cons.*
 51. *Fouquieriales* Takhtajan *ex* Reveal, 1992
 140. *Fouquieriaceae* Candolle, 1828, *nom. cons.*
 52. *Ebenales* Engler, 1892
Diospyrales Prantl, 1874
 141. *Ebenaceae* Gürcke, 1891, *nom. cons.*
Guaiacaceae A.L. Jussieu, 1789
Diospyraceae Vest, 1818
 142. *Lissocarpaceae* Gilg, 1924, *nom. cons.*
 53. *Styracales* Burnett, 1835
 143. *Styracaceae* Dumortier, 1829, *nom. cons.*
Halesiaceae D. Don, 1828
 54. *Sapotales* J.D. Hooker, 1868
 144. *Sapotaceae* A.L. Jussieu, 1789, *nom. cons.*
Achradaceae Vest, 1818
Bumeliaceae Barnhart, 1895
 145. *Boerlagellaceae* H.J. Lam, 1925
 146. *Sarcospermataceae* H.J. Lam, 1925, *nom. cons.*
 M. *Primulanae* R. Dahlgren *ex* Reveal, 1992
 55. *Myrsinales* Bromhead, 1838
 147. *Theophrastaceae* Link, 1829, *nom. cons.*
 148. *Myrsinaceae* R. Brown, 1810, *nom. cons.*
Ardisiaceae A.L. Jussieu, 1810
Embeliaceae J. Agardh, 1858
 149. *Aegicerataceae* Blume, 1833
 56. *Primulales* Dumortier, 1829
Samolales Dumortier, 1829
 150. *Primulaceae* Ventenat, 1799, *nom. cons.*
Lysimachiaceae A.L. Jussieu, 1789
Anagallidaceae Batsch *ex* Borckhausen, 1797
Samolaceae Rafinesque, 1820
 151. *Coridaceae* J. Agardh, 1858
 N. *Plumbaginanae* Takhtajan *ex* Reveal, 1992
 57. *Plumbaginales* Lindley, 1833
 152. *Plumbaginaceae* A.L. Jussieu, 1789, *nom. cons.*
 153. *Aegialitidaceae* Linczevski, 1968
 154. *Limoniaceae* Seringe, 1851, *nom. cons. prop.*
Staticaceae Cassel, 1817
Armeriaceae Horaninow, 1834
 O. *Polygonanae* Takhtajan *ex* Reveal, 1992
 58. *Polygonales* Dumortier, 1829
 155. *Polygonaceae* A.L. Jussieu, 1789, *nom. cons.*
Rumicaceae Martinov, 1820
Eriogonaceae (Dumortier) Meisner, 1841
Persicariaceae Adanson *ex* Post & Kuntze, 1903
 156. *Calligonaceae* Chalkuziev, 1985
 P. *Celastranae* Takhtajan, 1967

59. Celastrales Baskerville, 1839
 157. Celastraceae R. Brown, 1814, *nom. cons.*
Euonymaceae A.L. Jussieu *ex* Berchtold & J. Presl, 1820
Chingithamnaceae Handel-Mazetti, 1932
 158. Canotiaceae Airy Shaw, 1965
 159. Hippocrateaceae A.L. Jussieu, 1811, *nom. cons.*
Salaciaceae Rafinesque, 1838
 160. Siphonodontaceae (Croizat) Gagnepain & Tardieu *ex* Tardieu, 1951, *nom. cons.*
 161. Pottingeriaceae (Engler) Takhtajan, 1987
 162. Goupiaceae Miers, 1862
 163. Lophopyxidaceae (Engler) H. Pfeiffer, 1951
 164. Stackhousiaceae R. Brown, 1814, *nom. cons.*
- Q. Malvanae Takhtajan, 1967
 60. Malvales Dumortier, 1829
Tiliales Hutchinson, 1924
 165. Sterculiaceae (Candolle) Bartling, 1830, *nom. cons.*
Triplobaceae Rafinesque, 1838
 166. Byttneriaceae R. Brown, 1814, *nom. cons.*
Hermanniaceae Berchtold & J. Presl, 1820
Lasiopetalaceae Reichenbach, 1823
Dombeyaceae (Candolle) Bartling, 1830
Fremontiaceae J. Agardh, 1858
Helicteraceae J. Agardh, 1858
Melochiaceae J. Agardh, 1858
Theobromataceae J. Agardh, 1858
Chiranthodendraceae A. Gray, 1887
Cacaoaceae Augier *ex* Post & Kuntze, 1903
167. Huaceae A. Chevalier, 1947
 168. Elaeocarpaceae A.L. Jussieu *ex* Candolle, 1824, *nom. cons.*
Aristoleliaceae Dumortier, 1829
 169. Plagiopteraceae Airy Shaw, 1965
 170. Tiliaceae A.L. Jussieu, 1789, *nom. cons.*
Sparmanniaceae J. Agardh, 1858
 171. Monotaceae (Gilg) Maury *ex* Takhtajan, 1987.
 172. Dipterocarpaceae Blume, 1825, *nom. cons.*
 173. Sarcolaenaceae Caruel, 1881, *nom. cons.*
Schizolaenaceae Barnhart, 1895
Rhodolaenaceae Bullock, 1958
 174. Diegodendraceae Capuron, 1964
 175. Sphaerosepalaceae Tieghem *ex* Bullock, 1959
Rhopalocarpaceae Hemsley *ex* Takhtajan, 1987
 176. Bombacaceae Kunth, 1822, *nom. cons.*
 177. Malvaceae A.L. Jussieu, 1789, *nom. cons.*
Philippodendraceae Endlicher, 1841
Fugosiaceae Martinov, 1820, *nom. illeg.*
Hibiscaceae J. Agardh, 1858
Plagianthaceae J. Agardh, 1858
- R. Urticanae Takhtajan *ex* Reveal, 1992
 61. Ulmales Lindley, 1833
Ficales Dumortier, 1829
 178. Ulmaceae Mirbel, 1815, *nom. cons.*
 179. Celtidaceae Link, 1831
 180. Moraceae Link, 1831,

nom. cons.

- Artocarpaceae* R. Brown, 1818
Dorsteniaceae Chevallier, 1827
Ficaceae (Dumortier) Dumortier, 1829
 181. *Cecropiaceae* C.C. Berg, 1878
 62. *Urticales* Dumortier, 1829
 182. *Urticaceae* A.L. Jussieu, 1789, *nom. cons.*
 183. *Cannabaceae* Endlicher, 1837, *nom. cons.*
Lupulaceae Link, 1829
 63. *Barbeyales* Takhtajan *ex Reveal* & Takhtajan, 1993
 184. *Barbeyaceae* Rendle, 1916, *nom. cons.*
 5. *Rhamnanae* Takhtajan *ex Reveal*, 1992
 64. *Rhamnales* Dumortier, 1829
 185. *Rhamnaceae* A.L. Jussieu, 1789, *nom. cons.*
Frangulaceae Candolle, 1805
Gouaniaceae Rafinesque, 1837
Phyllicaceae J. Agardh, 1858
Ziziphaceae Adanson *ex Post* & Kuntze, 1903
 65. *Elaeagnales* Bromhead, 1838
 186. *Elaeagnaceae* A.L. Jussieu, 1789, *nom. cons.*
Hippophaeaceae G. Meyer, 1836
 6. *Euphorbianae* Takhtajan *ex Reveal*, 1992
 66. *Euphorbiales* Lindley, 1833
Crotonales Horaninow, 1847
 187. *Euphorbiaceae* A.L. Jussieu, 1789, *nom. cons.*
Tithymalaceae Ventenat, 1799
Mercurialaceae Martinov, 1820
Ricinaceae Martinov, 1820
Trewiaceae Lindley, 1836
Tragiaceae Rafinesque, 1838
Acalyphaceae J. Agardh, 1858
Bertyaceae J. Agardh, 1858
Crotonaceae J. Agardh, 1858
Hippomanaceae J. Agardh, 1858
Ricinocarpaceae (Müller arg.) Hurusawa, 1954
 188. *Phyllanthaceae* J. Agardh, 1858
Scepaceae Lindley, 1836
Aporusaceae Lindley *ex Miquel*, 1859
Porantheraceae (Pax) Hurusawa, 1954
 189. *Picrodendraceae* J.K. Small *ex Britton* & Millspaugh, 1920, *nom. cons.*
Pseudanthaceae Endlicher, 1839
Micrantheaceae J. Agardh, 1858
Paivaesusaceae Meeuse, 1990
 190. *Androstachyaceae* Airy Shaw, 1965
 191. *Bischofiaceae* (Müller arg.) Airy Shaw, 1965
 192. *Hymenocardiaceae* Airy Shaw, 1965
 193. *Peraceae* Klotzsch, 1859
 194. *Putranjivaceae* Endlicher, 1841
 195. *Stilaginaceae* J. Agardh, 1824
Antidesmataceae Loudon, 1830
 196. *Uapacaceae* (Müller arg.) Airy Shaw, 1965
 67. *Pandales* Engler & Gilg, 1912-1913
 197. *Pandaceae* Engler & Gilg, 1913, *nom. cons.*
Bennettiaceae R. Brown *ex Schnizlein*, 1843-1870, *nom. illeg.*
 198. *Dichapetalaceae* Baillon, 1886, *nom. cons.*
Chailletiaceae R. Brown, 1818
 68. *Simmondsiales* Reveal, 1992
 199. *Simmondsiaceae* (Müller

- arg.) Tieghem *ex* Reveal & Hoogland, 1990.
69. Thymelaeales Willkomm, 1854
Daphnales Lindley, 1833
 200. Gonystylaceae Gilg, 1897, *nom. cons.*
 201. Aquilariaceae R. Brown, 1818
 202. Thymelaeaceae A.L. Jussieu, 1789, *nom. cons.*
Daphnaceae Ventenat, 1799
Phaleriaceae Meisner, 1841
- U. Violanae R. Dahlgren *ex* Reveal, 1992
70. Cistales H.G.L. Reichenbach, 1828
Bizales Lindley, 1833
 203. Bixaceae Link, 1831, *nom. cons.*
 204. Cochlospermaceae Planchon, 1847, *nom. cons.*
 205. Cistaceae A.L. Jussieu, 1789, *nom. cons.*
Helianthemaceae G. Meyer, 1836
71. Violaes Perleb, 1826
 206. Violaceae Batsch, 1802, *nom. cons.*
Ionidiaceae Mertens & Koch, 1823
Leoniaceae A. de Candolle, 1844
Alsodeiaceae J. Agardh, 1858
72. Samydales Dumortier, 1829
Homaliales Bromhead, 1838
Flacourtiiales Heintze, 1927
 207. Berberidopsidaceae (Veldkamp) Takhtajan, 1985.
 208. Aphloiaceae Takhtajan, 1985
 209. Flacourtiaceae Richard *ex* Candolle, 1824, *nom. cons.*
Prockiaceae Bertuch, 1801
Homaliaceae R. Brown, 1818
 210. Samydaceae Ventenat, 1808, *nom. cons.*
Blakwelliaceae Lestiboudois, 1826
nom. illeg.
 211. Kiggellariaceae Link, 1831
Pangiaceae Endlicher, 1841
73. Lacistematales Baskerville, 1839
 212. Lacistemataceae C. Martius, 1826, *nom. cons.*
 213. Dipentodontaceae Merrill, 1941, *nom. cons.*
 214. Peridiscaceae Kuhlmann, 1950, *nom. cons.*
 215. Scyphostegiaceae Hutchinson, 1926, *nom. cons.*
74. Passiflorales Dumortier, 1829
 216. Passifloraceae A.L. Jussieu *ex* Kunth, 1817, *nom. cons.*
Paropsiaceae Dumortier, 1829
Smeathmanniaceae C. Martius *ex* Perleb, 1838
Modeccaceae Horaninow, 1847
 217. Malesherbiaceae D. Don, 1827, *nom. cons.*
 218. Achariaceae H. Harms, 1897, *nom. cons.*
75. Turnerales Dumortier, 1829
 219. Turneraceae Kunth *ex* Candolle, 1828, *nom. cons.*
Piriquetaceae Martinov, 1820
76. Caricales L. Benson, 1957
 220. Caricaceae Dumortier, 1829, *nom. cons.*
Papayaceae Blume, 1823, *nom. illeg.*
77. Salicales Lindley, 1833
 221. Salicaceae Mirbel, 1815, *nom. cons.*
78. Tamaricales Hutchinson, 1924
 222. Tamaricaceae Link, 1821, *nom. cons.*
Reaumuriaceae Ehrenberg *ex* Lindley, 1830

223. Frankeniaceae A. de Saint-Hilaire *ex* Gray, 1821, *nom. cons.*
79. Cucurbitales Dumortier, 1829
224. Cucurbitaceae A.L. Jussieu, 1789, *nom. cons.*
- Nhandiobaceae* Lestiboudois, 1826
- Zanoniaceae* Dumortier, 1829
- Bryoniaceae* G. Meyer, 1836
80. Begoniales Dumortier, 1829
225. Begoniaceae J. Agardh, 1824, *nom. cons.*
81. Datiscales Dumortier, 1829
226. Datisceae R. Brown *ex* Lindley, 1830, *nom. cons.*
227. Tetramelaceae (Warburg) Airy Shaw, 1965
82. Resedales Dumortier, 1829
228. Resedaceae Candolle *ex* Gray, 1821, *nom. cons.*
- Astrocarpaceae* A. Kerner, 1891
83. Tovariales Nakai, 1943
229. Tovariaceae Pax, 1891, *nom. cons.*
84. Capparales Hutchinson, 1924
230. Pentadiplandraceae Hutchinson & Dalziel, 1928
231. Koeberliniaceae Engler, 1895, *nom. cons.*
232. Capparaceae A.L. Jussieu, 1789, *nom. cons.*
233. Cleomaceae Horaninow, 1834
234. Oxystylidaceae Hutchinson, 1969
85. Brassicales Bromhead, 1838
235. Brassicaceae Burnett, 1835, *nom. cons.*
- Cruciferae* A.L. Jussieu, 1789, *nom. cons.*; *nom. alt.*
- Drabaceae* Martinov, 1820
- Erysimaceae* Martinov, 1820
- Sisymbriaceae* Martinov, 1820
- Thlaspiaceae* Martinov, 1820
- Stanleyaceae* Nuttall, 1834
- Raphanaceae* Horaninow, 1847
86. Salvadorales R. Dahlgren *ex* Reveal, 1992
236. Salvadoraceae Lindley, 1836, *nom. cons.*
- Azimaceae* Wight & Gardner, 1845
237. Gyrostemonaceae Endlicher, 1841, *nom. cons.*
87. Batales Engler, 1907
238. Bataceae C. Martius *ex* Meisner, 1842, *nom. cons.*
- V. Santalanae Thorne *ex* Reveal, 1992
88. Olacales Benthham, 1862
239. Olacaceae Mirbel *ex* Candolle, 1824, *nom. cons.*
- Schoepfiaceae* Blume, 1850
- Tetrastylidiaceae* Calestani, 1905
- Ximeniaceae* Martinet, 1873
240. Aptandraceae Miers, 1853
241. Octoknemaceae Engler, 1909, *nom. cons.*
242. Erythralaceae (Haskar) Sleumer, 1942, *nom. cons.*
243. Opiliaceae (Benthham) Valetton, 1886, *nom. cons.*
- Cansjeraceae* J. Agardh, 1858
244. Medusandraceae Brenan, 1952, *nom. cons.*
89. Santalales Dumortier, 1829
- Anthobolales* Dumortier, 1829
245. Santalaceae R. Brown, 1810, *nom. cons.*
- Thesiaceae* Vest, 1818
- Osyridaceae* Martinov, 1820
- Anthobolaceae* Dumortier, 1829
- Canopodaceae* Presl, 1851
- Ezocarpaceae* J. Agardh, 1858

90. Loranthes Dumortier, 1829
 246. Misodendraceae J. Agardh, 1858, *nom. cons.*
 247. Lorantheae A.L. Jussieu, 1808, *nom. cons.*
Elytrantheae Tieghem ex Nakai, 1952
Gaiadendraceae Tieghem ex Nakai, 1952
Nuytsiaceae Tieghem ex Nakai, 1952
Psittacanthaceae Nakai, 1952
 248. Eremolepidaceae Tieghem ex Nakai, 1952
 249. Viscaceae Batsch, 1802
Phoradendraceae Karsten, 1860
Arceuthobiaceae Tieghem ex Nakai, 1952
Bifariaceae Nakai, 1952
Dendrophthoeae Tieghem ex Nakai, 1952
Ginalloaceae Tieghem ex Nakai, 1952
Lepidocerataceae Nakai, 1952
 W. Balanophoranae R. Dahlgren ex Reveal, 1992
 91. Balanophorales Dumortier, 1829
 250. Mystropetalaceae J.D. Hooker, 1853
 251. Dactylanthaceae (Engler) Takhtajan, 1987
 252. Sarcophytaceae A. Kerner, 1891
 253. Heloseaceae (Schott & Endlicher) Tieghem ex Reveal & Hoogland, 1990
Scybalaceae A. Kerner, 1891
 254. Lophophytaceae Horaninow, 1847
 255. Balanophoraceae Richard, 1822, *nom. cons.*
Langsdorffiaceae Tieghem ex Pilger & K. Krause, 1914
 92. Cynomoriales Burnett, 1835
 256. Cynomoriaceae (C. Agardh) Lindley, 1833, *nom. cons.*
 V. Hamamelididae Takhtajan, 1967
 X. Trochodendranae Takhtajan ex Reveal, 1992
 93. Trochodendrales Takhtajan ex Cronquist, 1981
 257. Trochodendraceae Prantl, 1888, *nom. cons.*
 258. Tetracentraceae A.C. Smith, 1945, *nom. cons.*
 94. Eupteleales H.-H. Hu ex Reveal, 1992
 259. Eupteleaceae K. Wilhelm, 1910, *nom. cons.*
 95. Cercidiphyllales H.-H. Hu ex Reveal, 1992
 260. Cercidiphyllaceae Engler, 1909, *nom. cons.*
 Y. Hamamelidanae Takhtajan, 1967
 96. Hamamelidales Grisebach, 1854
 261. Platanaceae Lestiboudois ex Dumortier, 1829, *nom. cons.*
 262. Hamamelidaceae R. Brown, 1818, *nom. cons.*
Fothergillaceae Nuttall, 1818
Parrotiaceae Horaninow, 1834
Bucklandiaceae J. Agardh, 1858, *nom. illeg.*
Disanthaceae Nakai, 1943
 263. Rhodoleiaceae Nakai, 1943
 264. Altingiaceae Lindley, 1846, *nom. cons.*
 97. Casuarinales Lindley, 1833
 265. Casuarinaceae R. Brown, 1814, *nom. cons.*
 98. Buxales Takhtajan ex Reveal, 1992
 266. Buxaceae Dumortier, 1822, *nom. cons.*

- Pachysandraceae* J. Agardh, 1858
 267. *Stylocerataceae* (Pax) Baillon *ex* Reveal & Hoogland, 1990
 99. *Didymelales* Takhtajan, 1967
 268. *Didymelaceae* Leandri, 1937
 100. *Daphniphyllales* Pulle *ex* Cronquist, 1981
 269. *Daphniphyllaceae* Müller arg., 1869, *nom. cons.*
 101. *Balanopales* Engler, 1897
 270. *Balanopaceae* Benth., 1880, *nom. cons.*
 102. *Myrothamnales* Nakai *ex* Reveal, 1993
 271. *Myrothamnaceae* Niedenzu, 1891, *nom. cons.*
 103. *Hydrostachyales* Diels *ex* Reveal, 1992
 272. *Hydrostachyaceae* Engler, 1898, *nom. cons.*
 Z. *Juglandanae* Takhtajan *ex* Reveal, 1992
 104. *Rhoipteleales* Novák *ex* Reveal, 1992
 273. *Rhoipteleaceae* Handel-Mazzetti, 1932, *nom. cons.*
 105. *Juglandales* Dumortier, 1829
 274. *Juglandaceae* A. Richard *ex* Kunth, 1824, *nom. cons.*
Platycaryaceae Nakai, 1930
Pterocaryaceae Nakai, 1930
 106. *Myricales* Engler, 1897
 275. *Myricaceae* Blume, 1829, *nom. cons., emend. prop.*
 107. *Corylales* Dumortier, 1829
Betulales Burnett, 1835
 276. *Ticodendraceae* Gómez-Laurito & L.D. Gómez, 1991
 277. *Betulaceae* Gray, 1821, *nom. cons.*
 278. *Carpinaceae* Vest, 1818
 279. *Corylaceae* Mirbel, 1815, *nom. cons.*
 108. *Fagales* Engler, 1892
Quercales Burnett, 1835
 280. *Nothofagaceae* Kuprianova, 1962
 281. *Fagaceae* Dumortier, 1829, *nom. cons.*
Quercaceae Berchtold & J. Presl
Castaneaceae Baillon, 1878
 VI. *Rosidae* Takhtajan, 1967
 AA. *Geranianae* Thorne *ex* Reveal, 1992
 109. *Linales* Baskerville, 1839
 282. *Humiriaceae* Adr. Jussieu, 1829, *nom. cons.*
 283. *Ctenolophonaceae* (H. Winkler) Exell & Mendonça, 1951
 284. *Hugoniaceae* Arnott, 1834
 285. *Ixonanthaceae* (Benth.) Exell & Mendonça, 1951, *nom. cons.*
 286. *Linaceae* Candolle *ex* Gray, 1821, *nom. cons.*
 287. *Erythroxylaceae* Kunth, 1822, *nom. cons.*
Nectaropetalaceae (Winkler) Exell & Mendonça, 1951
 288. *Peganaceae* (Engler) Tieghem *ex* Takhtajan, 1987
 289. *Tetradiclidaceae* (Engler) Takhtajan, 1986
 290. *Tribulaceae* Trautvetter, 1853
 291. *Zygophyllaceae* R. Brown, 1814, *nom. cons.*
 292. *Nitrariaceae* Berchtold & J. Presl, 1820
 293. *Balanitaceae* Endlicher, 1841, *nom. cons.*
 110. *Rhizophorales* Tieghem *ex* Reveal, 1993

294. Rhizophoraceae R. Brown,
1814, *nom. cons.*
Mangiaceae Rafinesque, 1837
Legnotidaceae Endlicher, 1841,
nom. illeg.
Cassipoureaceae J. Agardh, 1858
Macarisiaceae J. Agardh, 1858
111. Oxalidales Heintze, 1927
295. Oxalidaceae R. Brown,
1818, *nom. cons.*
296. Avertroaceae Hutchin-
son, 1959
297. Lepidobotryaceae Léonard,
1950, *nom. cons.*
298. Hypseocharitaceae Wed-
dell, 1861
112. Geraniales Dumortier, 1829
299. Biebersteiniaceae Endlicher,
1841
300. Geraniaceae A.L. Jussieu,
1789, *nom. cons.*
Erodiaceae Horaninow, 1847
301. Dirachmaceae Hutchin-
son, 1959
302. Ledocarpaceae Meyen,
1834
303. Rhynchothecaceae End-
licher, 1841
304. Vivianiaceae Klotzsch,
1836
113. Balsaminales Lindley, 1833
305. Balsaminaceae A. Richard,
1822, *nom. cons.*
Hydroceraceae Blume, 1825, *nom.*
illeg.
Impatiéntaceae Barnhart, 1895
114. Tropaeolales Takhtajan *ex*
Reveal, 1992
306. Tropaeolaceae A.L. Jussieu
ex Candolle, 1824, *nom. cons.*
Cardamindaceae Link, 1829
115. Limnanthales Nakai, 1930
307. Limnanthaceae R. Brown,
1833, *nom. cons.*
116. Malpighiales C. Martius,
1835
308. Malpighiaceae A.L. Jussieu,
1789, *nom. cons.*
117. Vochysiales Dumortier, 1829
309. Trigoniaceae Endlicher,
1841, *nom. cons.*
310. Euphroniaceae Marcano-
Berti, 1989
311. Vochysiaceae A. Saint-
Hilaire, 1820, *nom. cons.*
118. Polygalales Dumortier, 1829
312. Polygalaceae R. Brown,
1814, *nom. cons.*
Moutabeaceae Endlicher, 1841
313. Diclidanthaceae J. Agardh,
1858, *nom. cons.*
314. Xanthophyllaceae (Cho-
dat) Gagnepain *ex* Reveal &
Hoogland, 1990
315. Krameriaceae Dumortier,
1829, *nom. cons.*
- BB. Rutanae Takhtajan, 1967
119. Rutales Perleb, 1826
Citralés Dumortier, 1829
Terebinthales Dumortier, 1829
316. Rutaceae A.L. Jussieu,
1789, *nom. cons.*
Aurantiaceae A.L. Jussieu, 1789
Citracéae Roussel, 1806
Diosmaceae R. Brown, 1814
Amyridaceae R. Brown, 1818
Dictamnaceae Vest, 1818
Zanthozylaceae Berchtold & J.
Presl, 1820
Jamboliferaceae Martinov, 1820
Frazinellaceae Nees & C. Mar-
tius, 1823
Pteleaceae Kunth, 1824
Cuspariaceae (Candolle) Trat-
tinnick, 1825
Monieraceae Rafinesque, 1838,

- nom. illeg.*
Boroniaceae J. Agardh, 1858
Correaceae J. Agardh, 1858
Diplolaenaceae J. Agardh, 1858
Pilocarpaceae J. Agardh, 1858
Spatheliaceae J. Agardh, 1858
317. *Flindersiaceae* (Engler)
C. White *ex* Airy Shaw, 1965.
318. *Rhabdodendraceae* (Huber) Prance, 1968
120. *Meliales* Lindley, 1833
319. *Cneoraceae* Link, 1831,
nom. cons.
Chamaeleaceae Bertoloni, 1834,
nom. illeg.
320. *Simaroubaceae* Candolle,
1811, *nom. cons.*
Quassiacae Bertoloni, 1827
Soulameaceae Endlicher, 1841
Simabaceae Horaninow, 1847
Ailanthaceae J. Agardh, 1858
Castelaceae J. Agardh, 1858
321. *Kirkiaceae* (Engler) Takh-
tajan, 1967
322. *Irvingiaceae* (Engler) Ex-
ell & Mendonça, 1951, *nom.*
cons.
323. *Ptaeroxylaceae* J. Leroy,
1960
324. *Meliaceae* A.L. Jussieu,
1789, *nom. cons.*
Cedrelaceae R. Brown, 1814
Swieteniaceae Berchtold & J.
Presl, 1820
Aitoniaceae (Harvey) Reveal
& Hoogland, 1992, *nom. cons.*
prop.
121. *Burserales* Baskerville, 1839
325. *Burseraceae* Kunth, 1824,
nom. cons.
Balsameaceae Dumortier, 1829
326. *Anacardiaceae* Lindley,
1830, *nom. cons.*
Cassuviaceae A.L. Jussieu *ex*
R. Brown, 1818, *nom. illeg.*
Comocladaceae Martinov, 1820
Spondiadaceae Martinov, 1820
Vernicaceae Link, 1829
Schinaceae Rafinesque, 1837
Sumachiaceae Candolle *ex* Per-
leb, 1838, *nom. illeg.*
327. *Podoaceae* Baillon *ex* Fran-
chet, 1889
328. *Pistaciaceae* C. Martius
ex Perleb, 1838
Terebinthaceae A.L. Jussieu, 1789
Lentiscaceae Horaninow, 1843
329. *Blepharocaryaceae* Airy
Shaw, 1965
330. *Tepuianthaceae* Maguire
& Steyermark, 1981
122. *Julianales* Engler, 1907
331. *Julianiaceae* Hemsley, 1906,
nom. cons.
123. *Leitneriales* Engler, 1897
332. *Leitneriaceae* Benthams,
1880, *nom. cons.*
124. *Coriariales* Lindley, 1833
333. *Coriariaceae* Candolle,
1824, *nom. cons.*
125. *Sapindales* Dumortier, 1829
334. *Dodonaeeaceae* Link, 1831,
nom. cons.
335. *Stylobasiaceae* J. Agardh,
1858
336. *Emblingiaceae* (Pax) Airy
Shaw, 1965
337. *Sapindaceae* A.L. Jussieu,
1789, *nom. cons.*
Allophyllaceae Martinov, 1820
Ornithropaceae Martinov, 1820
Koelreuteriaceae J. Agardh, 1858
338. *Meliosmaceae* Endlicher,
1841
Mullingtoniaceae Wight & Arnott,
1834, *nom. illeg.*

- Wellingtoniaceae* Meisner, 1840
 339. *Sabiaceae* Blume, 1851,
nom. cons.
 340. *Physenaceae* Takhtajan,
 1985
 341. *Melanthaceae* Link, 1831,
nom. cons.
 342. *Akaniaceae* Stapf, 1912,
nom. cons.
 343. *Bretschneideraceae* En-
 gler & Gilg, 1924, *nom. cons.*
 126. *Acerales* Lindley, 1833
Aesculales Bromhead, 1838
 344. *Hippocastanaceae* Can-
 dolle, 1824, *nom. cons.*
Aesculaceae Berchtold & J. Presl,
 1820
Paviaceae Horaninow, 1834
 345. *Aceraceae* A.L. Jussieu,
 1789, *nom. cons.*
 127. *Moringales* Nakai, 1943
 346. *Moringaceae* R. Brown
 ex Dumortier, 1829, *nom. cons.*
Hyperantheraceae Link, 1829
 CC. *Fabanae* R. Dahlgren ex Re-
 veal, 1992
 128. *Connarales* Burnett, 1835
 347. *Surianaceae* Arnott, 1834,
nom. cons.
 348. *Connaraceae* R. Brown,
 1818, *nom. cons.*
Cnestidaceae (Rafinesque) Rafin-
 esque, 1830
 129. *Fabales* Bromhead, 1838
Papilionales Batsch, 1802
Lotales Burnett, 1835
Mimosales Burnett, 1835
Cassiales Horaninow, 1847
 349. *Caesalpiniaceae* R. Brown,
 1814, *nom. cons.*
Cassiaceae Vest, 1818
Tamarindaceae Berchtold & J.
 Presl
Bauhiniaceae Martinov, 1820
Ceratoniaceae Link, 1829
Detariaceae (Candolle) J. Hess,
 1832
 350. *Mimosaceae* R. Brown,
 1814, *nom. cons.*
 351. *Swartziaceae* (Candolle)
 Bartling, 1830
 352. *Fabaceae* Lindley, 1836,
nom. cons.
Leguminosae A.L. Jussieu, 1789,
nom. cons.; *nom. alt.*
Papilionaceae Giseke, 1792, *nom.*
cons.; *nom. alt.*
Robiniaceae Vest, 1818
Viciaceae Berchtold & J. Presl,
 1820
Aspalathaceae Martinov, 1820
Astragalaceae Martinov, 1820
Coronillaceae Martinov, 1820
Galedupaceae Martinov, 1820,
nom. illeg.
Sophoraceae Sprengel ex Wein-
 mann, 1824
Hedysaraceae Oken, 1826
Lotaceae Oken, 1826
Lathyraceae Burnett, 1835
Phaseolaceae Schnizlein, 1843-
 1870
Ciceraceae W. Steele, 1847
 DD. *Proteanae* Takhtajan, 1967
 130. *Proteales* Dumortier, 1829
 353. *Proteaceae* A.L. Jussieu,
 1789, *nom. cons.*
Embothriaceae Sprengel ex Wein-
 mann, 1824
Lepidocarpaceae Schultz-Schult-
 zenstein, 1832, *nom. illeg.*
 EE. *Rosanae* Takhtajan, 1967
 131. *Rosales* Perleb, 1826
Sanguisorbales Dumortier, 1829
 354. *Rosaceae* A.L. Jussieu,
 1789, *nom. cons.*

- Spiraeaceae* Bertuch, 1801
Poteriaceae Rafinesque, 1815
Fragariaceae Richard ex Nestler, 1816
Alchemillaceae Martinov, 1820
Tormentillaceae Martinov, 1820
Sanguisorbaceae Marquis, 1820
Agrimoniaceae Gray, 1821
Dryadaceae Gray, 1821
Ulmariaceae Gray, 1821
Potentillaceae Sprengel ex Weinmann, 1824
Quillajaceae D. Don, 1831
Neilliaceae Miquel, 1855
Cercocarpaceae J. Agardh, 1858
Coleogynaceae J. Agardh, 1858
Lindleyaceae J. Agardh, 1858
Rhodotypaceae J. Agardh, 1858
355. *Amygdalaceae* (A.L. Jussieu) D. Don, 1825, *nom. cons.*
Prunaceae Berchtold & J. Presl, 1820
356. *Malaceae* J.K. Small ex Britton, 1903, *nom. cons.*
Pyraceae Vest, 1818
Mespilaceae Schultz-Schultzenstein, 1832
Cydoniaceae Schnizlein, 1858
357. *Neuradaceae* Link, 1829, *nom. cons. prop.*
Griellaceae Martinov, 1820
132. *Crossosomatales* Takhtajan ex Reveal, 1992
358. *Crossosomataceae* Engler, 1897, *nom. cons.*
133. *Crassulales* Lindley
Sedales Reichenbach, 1828
359. *Tetracarpaeaceae* Nakai, 1943
360. *Crassulaceae* Candolle, 1805, *nom. cons.*
Sempervivaceae A.L. Jussieu, 1789
Sedaceae Roussel, 1806
Cotyledonaceae Martinov, 1820
Rhodiolaceae Martinov, 1820
Tillaeaceae Martinov, 1820
134. *Cephalotales* Nakai, 1943
361. *Cephalotaceae* Dumortier, 1829, *nom. cons.*
135. *Saxifragales* Dumortier, 1829
362. *Penthoraceae* Rydberg ex Britton, 1901, *nom. cons.*
363. *Saxifragaceae* A.L. Jussieu, 1789, *nom. cons.*
Pectiantiaceae Rafinesque, 1837
136. *Grossulariales* Lindley, 1833
364. *Grossulariaceae* Candolle, 1805, *nom. cons.*
Ribesiaceae Marquis, 1820
137. *Parnassiales* Nakai, 1943
365. *Francoaceae* Adr. Jussieu, 1832, *nom. cons.*
366. *Vahliaceae* Dandy, 1959
367. *Eremosynaceae* Dandy, 1959
368. *Lepuropetalaceae* (Engler) Nakai, 1943
369. *Parnassiaceae* Gray, 1821, *nom. cons.*
370. *Greyiaceae* Hutchinson, 1926, *nom. cons.*
138. *Droserales* Grisebach, 1854
371. *Droseraceae* R.A. Salisbury, 1808, *nom. cons.*
372. *Drosophyllaceae* Chrtek, Slavíková, & Studicka, 1989
373. *Dionaeaceae* Rafinesque, 1837
374. *Aldrovandaceae* Nakai, 1949
139. *Stylidiales* Takhtajan ex Reveal, 1992
375. *Donatiaceae* Hutchinson, 1959, *nom. cons., emend. prop.*
376. *Stylidiaceae* R. Brown,

- 1810, *nom. cons.*
Candolleaceae Mueller, 1882-1883, *nom. illeg.*
140. Diapensiales Engler & Gilg, 1924
 377. Diapensiaceae (Link) Lindley, 1836, *nom. cons.*
Galacaceae D. Don, 1827
141. Roridulales Nakai, 1943
 378. Roridulaceae Engler & Gilg, 1924, *nom. cons.*
142. Bruniales Dumortier, 1829
 379. Anisophylleaceae Ridley, 1922
Polygonanthaceae Croizat, 1943
 380. Bruniaceae R. Brown *ex* Candolle, 1825, *nom. cons.*
Berzeliaceae Nakai, 1943
 381. Grubbiaceae Endlicher, 1839, *nom. cons.*
Ophiraceae Arnott, 1841
143. Geissolomatales Takhtajan *ex* Reveal, 1992
 382. Geissolomataceae Endlicher, 1841, *nom. cons.*
144. Cunoniales Hutchinson, 1924
 383. Cunoniaceae R. Brown, 1814, *nom. cons.*
Belangeraceae J. Agardh, 1858
Callicomaceae J. Agardh, 1858
 384. Baueraceae Lindley, 1830
 385. Eucryphiaceae Endlicher, 1841, *nom. cons.*
 386. Brunelliaceae Engler, 1897, *nom. cons.*
 387. Davidsoniaceae Bange, 1952
 388. Staphyleaceae (Candolle) Lindley, 1829, *nom. cons.*
Ochranthaceae Lindley *ex* Endlicher, 1841
 389. Tapisciaceae (Pax) Takhtajan, 1987
- FF. Vitanae Takhtajan *ex* Reveal 1992
 145. Vitales Burnett, 1835
 390. Vitaceae A.L. Jussieu 1789, *nom. cons.*
Ampelopsidaceae Kosteletzky 1835
Cissaceae Horaninow, 1847
Pterisanthaceae J. Agardh, 1847
 391. Leeaceae (Candolle) Dumortier, 1829, *nom. cons.*
- GG. Cornanae Thorne *ex* Reveal 1992
 146. Hydrangeales Nakai, 1943
 392. Philadelphaceae Martynov, 1820
 393. Hydrangeaceae Dumortier, 1829, *nom. cons.*
Hortensiaceae Berchtold & J. Presl, 1820
Kirengeshomaceae Nakai, 1943
 394. Escalloniaceae R. Brown *ex* Dumortier, 1829, *nom. cons.*
 395. Argophyllaceae (Engler) Takhtajan, 1987
 396. Iteaceae J. Agardh, 1858, *nom. cons.*
 397. Tribelaceae (Engler) Airy Shaw, 1965
 398. Dulongiaceae J. Agardh, 1858, *nom. cons. prop.*
Phyllonomataceae J.K. Small, 1905, *nom. rej. prop.*
 399. Pterostemonaceae J.K. Small, 1905, *nom. cons.*
 400. Griselinaceae (Wangerin) Takhtajan, 1987
 401. Carpodetaceae Fenzl, 1847
 402. Alseuosmiaceae Airy Shaw, 1965
 403. Montiniaceae Nakai, 1943, *nom. cons.*
 404. Melanophyllaceae Takhtajan, 1987

- jan *ex* Airy Shaw, 1972
 406. Rousseeaceae Candolle, 1839
 407. Columelliaceae D. Don, 1828, *nom. cons.*
 408. Desfontainiaceae Endlicher, 1841
 147. Brexiales Lindley, 1833
 405. Brexiaceae Loudon, 1830.
Izerbaceae Grisebach, 1854
 148. Gunnerales Takhtajan *ex* Reveal, 1992
 409. Gunneraceae Meisner, 1842, *nom. cons.*
 149. Haloragales Bromhead, 1838
 410. Haloragaceae R. Brown, 1814, *nom. cons.*
Cercodiaceae A.L. Jussieu, 1817
 411. Myriophyllaceae Schultz-Schultzenstein, 1832
 150. Cornales Dumortier, 1829
 412. Davidiaceae (H. Harms) H.L. Li, 1955
 413. Nyssaceae A.L. Jussieu *ex* Dumortier, 1829, *nom. cons.*
 414. Mastixiaceae Calestani, 1905
 415. Cornaceae (Dumortier) Dumortier, 1829, *nom. cons.*
 416. Curtisiaceae (H. Harms) Takhtajan, 1987
 417. Alangiaceae Candolle, 1828, *nom. cons.*
 418. Aucubaceae J. Agardh, 1858
 151. Garryales Lindley, 1846
 419. Garryaceae Lindley, 1834, *nom. cons.*
 152. Aralidiales Takhtajan *ex* Reveal, 1992
 420. Aralidiaceae Philipson & Stone, 1980
 HH. Eucommianae Takhtajan *ex* Reveal, 1992
 153. Eucommiales Nemejc *ex* Cronquist, 1981
 421. Eucommiaceae Engler, 1909, *nom. cons.*
 154. Icacinales Tieghem *ex* Reveal, 1993
 422. Icacinaceae (Bentham) Miers, 1851, *nom. cons.*
Phytocrenaceae Arnott *ex* Brown, 1852
Pennantiaceae J. Agardh, 1858
 423. Metteniusaceae Schnizlein, 1843-1870
 424. Corynocarpaceae Engler, 1897, *nom. cons.*
 425. Cardiopteridaceae Blume, 1849, *nom. cons.*
Peripterygiaceae F.N. Williams, 1905
 426. Aextoxicaceae Engler & Gilg, 1920, *nom. cons.*
 155. Pittosporales Lindley, 1833
 427. Pittosporaceae R. Brown, 1814, *nom. cons.*
 156. Byblidales Nakai *ex* Reveal, 1993
 428. Byblidaceae Domin, 1922, *nom. cons.*
 429. Tremandraceae R. Brown *ex* Candolle, 1824, *nom. cons.*
 II. Podostemonanae R. Dahlgren *ex* Reveal, 1992
 157. Podostemales Lindley, 1833
Marathrales Dumortier, 1829
 430. Podostemaceae Richard *ex* C. Agardh, 1822, *nom. cons.*
Marathraceae Dumortier, 1829
 431. Tristichaceae J.C. Willis, 1915
Philocrenaceae Bongard, 1834
 JJ. Aralianae Takhtajan, 1967

158. Torricelliales Takhtajan *ex*
Reveal, 1992
432. Helwingiaceae Decaisne,
1836
433. Torricelliaceae (Wangerin)
H.H. Hu, 1934
159. Araliales Burnett, 1835
- Angelicales* Burnett, 1835
- Ammiales* J.K. Small, 1903
- Apiales* Nakai, 1930
434. Araliaceae A.L. Jussieu,
1789, *nom. cons.*
- Hederaceae* Giseke, 1792
- Botryodendraceae* J. Agardh,
1858
435. Hydrocotylaceae (Drude)
N. Hylander, 1945, *nom. cons.*
436. Saniculaceae (Drude) A.
Löve & D. Löve, 1974
- Eryngiaceae* Rafinesque, 1838
437. Apiaceae Lindley, 1836,
nom. cons.
- Umbelliferae* A.L. Jussieu, 1789,
nom. cons.; *nom. alt.*
- Angelicaceae* Martinov, 1820
- Bupleuraceae* Martinov, 1820
- Daucaceae* Martinov, 1820
- Imperatoriaceae* Martinov, 1820
- Pastinacaceae* Martinov, 1820
- Coriandraceae* Burnett, 1835
- Smyrniaceae* Burnett, 1835
- Ammiaceae* (J. Presl & Presl)
Barnhart, 1895
160. Caprifoliales Lindley, 1833
- Lonicerales* C. Baenitz, 1877
438. Caprifoliaceae A.L. Jussieu,
1789, *nom. cons.*
- Loniceraceae* Vest, 1818
439. Carlemanniaceae Airy
Shaw, 1965
161. Viburnales Dumortier, 1829
- Adoxales* Nakai, 1949
440. Adoxaceae Trautvetter,
1853, *nom. cons.*
441. Sambucaceae Batsch
Borck-hausen, 1797
442. Viburnaceae Rafinesque,
1820
- Tinaceae* Martinov, 1820
162. Valerianales Burnett, 1835
443. Valerianaceae Batsch,
1802, *nom. cons.*
444. Triplotegiaceae (Höck)
Bobrov *ex* Airy Shaw, 1903
163. Dipsacales Dumortier, 1829
445. Dipsacaceae A.L. Jussieu,
1789, *nom. cons.*
- Scabiosaceae* Adanson *ex* Poiret
& Kuntze, 1903
446. Morinaceae Rafinesque,
1820
- VII. Asteridae Takhtajan, 1967
- KK. Asteranae Takhtajan, 1967
164. Calycerales Burnett, 1833
447. Calyceraceae R. Brown
ex Richard, 1820, *nom. cons.*
- Boopidaceae* Cassini, 1816
165. Asterales Lindley, 1833
- Ambrosiales* Dumortier, 1829
- Carduales* J.K. Small, 1903
448. Cichoriaceae A.L. Jussieu,
1789, *nom. cons.*
- Cynaraceae* A.L. Jussieu, 1789
- Cnicaceae* Vest, 1818
- Centaureaceae* Martinov, 1820
- Lapsanaceae* Martinov, 1820
- Picridaceae* Martinov, 1820
- Serratulaceae* Martinov, 1820
- Echinopaceae* Dumortier, 1829
- Acarnaceae* Link, 1829
- Perdiciaceae* Link, 1829
- Carduaceae* Dumortier, 1829
- Mutisiaceae* Burnett, 1835
- Nassauviaceae* Burmeister, 1845
- Lactucaceae* Drude, 1879
- Arctotidaceae* Bessey, 1914

449. Asteraceae Dumortier, 1822, *nom. cons.*
Compositae Giseke, 1792, *nom. cons.*, *nom. alt.*
Tanacetaceae Vest, 1818
Anthemidaceae Martinov, 1820
Artemisiaceae Martinov, 1820
Athanasaceae Martinov, 1820
Eupatoriaceae Martinov, 1820
Santolinaceae Martinov, 1820
Heleniaceae Rafinesque, 1824
Calendulaceae Link, 1829
Coreopsidaceae Link, 1829
Helichrysaceae Link, 1829
Partheniaceae Link, 1829
Helianthaceae Dumortier, 1829
Gnaphaliaceae F. Rudolphi, 1830
Senecionaceae Spenner, 1834
Vernoniaceae Burmeister, 1837
Matricariaceae Voigt, 1845
Inulaceae Bessey, 1914
450. Ambrosiaceae Dumortier, 1829, *nom. cons.*, *emend. prop.*
Xanthiaceae Vest, 1818
- LL. Campanulanae Takhtajan *ex* Reveal, 1992
166. Campanulales Reichenbach, 1828
451. Menyanthaceae (Dumortier) Dumortier, 1829, *nom. cons.*
452. Pentaphragmataceae J. Agardh, 1858, *nom. cons.*
453. Sphenocleaceae C. Martius *ex* Candolle, 1839, *nom. cons.*
Pongatiaceae Meisner, 1839, *nom. illeg.*
454. Campanulaceae A.L. Jussieu, 1789, *nom. cons.*
Jasionaceae Dumortier, 1829
Cyananthaceae J. Agardh, 1858
455. Cyphiaceae A. de Can-
- dolle, 1839
456. Nemacladaceae Nuttall, 1843
457. Lobeliaceae R. Brown, 1817, *nom. cons.*
458. Cyphocarpaceae Miers, 1848
167. Goodeniales Lindley, 1833
Brunoniales Lindley, 1833
459. Goodeniaceae R. Brown, 1810, *nom. cons.*
Scaevolaceae Lindley, 1830
460. Brunoniaceae Dumortier, 1829, *nom. cons.*
- VIII. Lamiidae Takhtajan *ex* Reveal, 1992
- MM. Solananae R. Dahlgren *ex* Reveal, 1992
168. Solanales Dumortier, 1829
461. Solanaceae A.L. Jussieu, 1789, *nom. cons.*
Hyoscyamaceae Vest, 1818
Atropaceae Martinov, 1820
Nicotianaceae Martinov, 1820
Daturaceae Rafinesque, 1828
Cestraceae Schlechtendal, 1833
Lyciaceae Rafinesque, 1840
462. Salpiglossidaceae (Benth.) Hutchinson, 1969.
463. Sclerophylacaceae Miers, 1848
464. Duckeodendraceae Kuhlmann, 1950
465. Goetzeaceae Miers *ex* Airy Shaw, 1965
169. Nolanales Lindley, 1833
466. Nolanaceae Dumortier, 1829, *nom. cons.*
170. Convolvulales Dumortier, 1829
467. Erycibaceae Endlicher, 1840
468. Humbertiaceae Pichon,

- 1947, *nom. cons.*
 469. Convolvulaceae A.L. Jussieu, 1789, *nom. cons.*
Cressaceae Rafinesque, 1821
Poranaceae J. Agardh, 1858
 470. Dichondraceae Dumortier, 1829, *nom. cons.*
 471. Cuscutaceae (Dumortier) Dumortier, 1829, *nom. cons.*
 171. Boraginales Dumortier, 1829
Echiales Lindley, 1846
 472. Hydrophyllaceae R. Brown ex Ker-Gawler, 1817, *nom. cons.*
Ellisiaceae Berchtold & J. Presl, 1820
Hydroleaceae Berchtold & J. Presl, 1820
Sagoneaceae Martinov, 1820
Eutocaceae Horaninow, 1847
 473. Ehretiaceae C. Martius ex Lindley, 1830, *nom. cons.*
 474. Cordiaceae R. Brown ex Dumortier, 1829, *nom. cons.*
Sebestenaceae Ventenat, 1799
 475. Heliotropiaceae Schrader, 1820, *nom. cons.*
 476. Boraginaceae A.L. Jussieu, 1789, *nom. cons.*
Buglossaceae Hoffmannsegg & Link, 1810
Anchusaceae Vest, 1818
Cerinthaceae Martinov, 1820
Onosmaceae Martinov, 1820
Echiaceae Rafinesque, 1837
 477. Wellstediaceae (Pilger) Novák, 1943
 478. Hoplestigmataceae Gilg, 1924, *nom. cons.*
 479. Lennoaceae Solms-Laubach, 1870, *nom. cons.*
 480. Tetrachondraceae Wettstein, 1924
 172. Polemoniales Bromhead, 1838
 481. Cobaeaceae D. Don, 1824
 482. Polemoniaceae A.L. Jussieu, 1789, *nom. cons.*
 NN. Loasanae R. Dahlgren ex Reveal, 1992
 173. Loasales Bessey, 1907
 483. Loasaceae Dumortier, 1822, *nom. cons.*
Gronoviaceae Endlicher, 1841
Cevalliaceae Grisebach, 1854
 OO. Myrtanae Takhtajan, 1967
 174. Lythrales Oliver, 1895
 484. Psiloxylonaceae Croizat, 1961
 485. Heteropyxidaceae Engler & Gilg, 1920, *nom. cons.*
 486. Lythraceae Jaume Saint-Hilaire, 1805, *nom. cons.*
Salicariaceae A.L. Jussieu, 1789
Ammanniaceae Horaninow, 1834
Lagerstroemiaceae J. Agardh, 1858
Lawsoniaceae J. Agardh, 1858
 487. Duabangaceae Takhtajan, 1986
 488. Sonneratiaceae Engler & Gilg, 1924, *nom. cons.*
Blattiaceae Niedenzu, 1892
 489. Punicaceae Horaninow, 1834
 490. Alzateaceae S. Graham, 1985
 491. Rhynchocalycaceae L. Johnson & B. Briggs, 1985.
 492. Trapaceae Dumortier, 1829, *nom. cons.*
 493. Crypteroniaceae A. de Candolle, 1868, *nom. cons.*
Henslowiaceae Lindley, 1835
 175. Penaeales Lindley, 1833
 494. Penaeaceae Sweet ex Guille-

- min, *nom. cons.*
495. Oliniaceae Harvey & Sonder, 1862, *nom. cons.*
176. Melastomatales Oliver, 1895
496. Melastomataceae A.L. Jussieu, 1789, *nom. cons.*
- Rheziaceae Dumortier, 1822
- Miconiaceae Koch, 1857
- Blakeaceae Reichenbach ex Barnhart, 1895
497. Memecylaceae Candolle, 1828
- Mouririaceae Gardner, 1849, *nom. illeg.*
177. Combretales Baskerville, 1839
498. Combretaceae R. Brown, 1810, *nom. cons.*
- Terminaliaceae Jaume Saint-Hilaire, 1805
- Myrobalanaceae Martinov, 1820
- Bucidaceae Sprengel ex Weinmann, 1824
- Sheadendraceae Bertoloni f., 1850
178. Onagrales Reichenbach, 1828
- Oenotherales Bromhead, 1838
499. Onagraceae A.L. Jussieu, 1789, *nom. cons.*
- Epilobiaceae Ventenat, 1799
- Oenotheraceae Robin, 1807
- Isnardiaceae Martinov, 1820
- Jussiaeaceae Martinov, 1820
- Circaeaceae Lindley, 1829
179. Myrtales Reichenbach, 1828
500. Myrtaceae A.L. Jussieu, 1789, *nom. cons.*
- Myrrhiniaceae Arnott, 1839
- Kaniaceae Nakai, 1943
501. Leptospermaceae F. Rudolphi, 1830
- Melaleucaceae Vest, 1818
- Chamelauciaceae Candolle ex F. Rudolphi, 1830
- PP. Gentiananae Thorne ex Reveal, 1992
180. Loganiales Lindley, 1833
502. Loganiaceae R. Brown ex C. Martius, 1827, *nom. cons.*
503. Strychnaceae Candolle ex Perleb, 1826
- Gardneriaceae Wallich ex Perleb, 1838
504. Potaliaceae C. Martius, 1827
505. Spigeliaceae C. Martius, 1827
506. Antoniaceae Hutchinson, 1959
507. Plocospermataceae Hutchinson, 1973
181. Rubiales Dumortier, 1829
- Cinchonales Lindley, 1833
- Galiales Bromhead, 1838
508. Naucleaceae (Candolle) Wernham, 1911
- Cinchonaceae Batsch, 1802
- Cephalanthaceae Rafinesque, 1820
- Sabiceaceae Martinov, 1820
509. Rubiaceae A.L. Jussieu, 1789, *nom. cons.*
- Coffeaceae Batsch, 1802
- Guettardaceae Batsch, 1802
- Aparinaceae Hoffmannsegg & Link, 1813-1820
- Operculariaceae A.L. Jussieu ex Perleb, 1818
- Catesbaeaceae Martinov, 1820
- Coutareaceae Martinov, 1820
- Nonateliaceae Martinov, 1820
- Hydrophylaceae Martinov, 1820
- Pagamaeaceae Martinov, 1820
- Randiaceae Martinov, 1820
- Spermacoceaceae Sprengel ex Weinmann, 1824
- Gardeniaceae Dumortier, 1829

- Hedyotidaceae* Dumortier, 1829
Lygodisodeaceae Bartling, 1830
Psychotriaceae F. Rudolphi, 1830
Asperulaceae Spenner, 1835
Galiaceae Lindley, 1836
Lippayaceae Meisner, 1838
Houstoniaceae Rafinesque, 1840
 510. *Henriqueziaceae* Bremekamp, 1957
 511. *Dialypetalanthaceae* Rizzi-
 ni & Occhioni, 1948, *nom.*
cons.
 182. *Theligonales* Nakai, 1942
 512. *Theligonaceae* Dumortier,
 1829, *nom. cons.*
Cynocrambaceae Endlicher, 1841,
nom. illeg.
 183. *Apocynales* Bromhead, 1838
Vincales Horaninow, 1847
 513. *Apocynaceae* A.L. Jussieu,
 1789, *nom. cons.*
Vincaceae Vest, 1818
Cerberaceae Martinov, 1820
Pacouriaceae Martinov, 1820,
nom. illeg.
Carissaceae Sprengel ex Wein-
 mann, 1824
Plumeriaceae Horaninow, 1834
Ophioxylaceae C. Martius ex
 Perleb, 1838
Willughbeiaceae J. Agardh, 1858
 514. *Periplocaceae* Schlechter,
 1905, *nom. cons.*
 184. *Asclepiadales* Dumortier,
 1829
 515. *Asclepiadaceae* R. Brown,
 1810, *nom. cons.*
Stapelaceae Horaninow, 1834
Cynanchaceae G. Meyer, 1836
 185. *Gentianales* Lindley, 1833
Chironiales Grisebach, 1854
 516. *Gentianaceae* A.L. Jussieu,
 1789, *nom. cons.*
Coutoubeaceae Martinov, 1820
Obolariaceae Martinov, 1820
Chironiaceae Horaninow, 1847
 517. *Saccifoliaceae* Maguire
 & Pires, 1978
 Q.Q. *Lamianae* Takhtajan, 1967
 186. *Jasminales* Dumortier, 1829
Oleales Lindley, 1833
Ligustrales Bischoff, 1840
 518. *Jasminaceae* A.L. Jussieu
 1789
Bolivariaceae Grisebach, 1838
Nyctanthaceae J. Agardh, 1858
 519. *Oleaceae* Hoffmannsegg
 & Link, 1813-1820, *nom. con.*
Lilacaceae Ventenat, 1799
Frazinaceae Vest, 1818
Ligustraceae G. Meyer, 1836
Forestieraceae Endlicher, 1841
Schreberaceae (Wight) Schniz-
 lein, 1843-1870
Syringaceae Horaninow, 1847
 187. *Plantaginales* Lindley, 1833
 520. *Plantaginaceae* A.L. Jussi-
 1789, *nom. cons.*
Littorellaceae Gray, 1821
Psylliaceae Horaninow, 1834
 188. *Bignoniales* Lindley, 1833
 521. *Bignoniaceae* A.L. Jussieu
 1789, *nom. cons.*
Crescentiaceae Dumortier, 1829
 522. *Pedaliaceae* R. Brown,
 1810, *nom. cons.*
Sesamaceae R. Brown ex Berch-
 told & J. Presl, 1820
 523. *Trapellaceae* Honda &
 Saki-saka, 1930
 524. *Martyniaceae* Stapf, 1895,
nom. cons.
 189. *Scrophulariales* Lindley, 1833
Rhinanthales Dumortier, 1829
Veratrales Dumortier, 1829
 525. *Buddlejaceae* K. Wilhelm,

- 1910, *nom. cons.*
 526. Myoporaceae R. Brown, 1810, *nom. cons.*
Bontiaceae Horaninow, 1834
 527. Scrophulariaceae A.L. Jussieu, 1789, *nom. cons.*
Pedicularidaceae A.L. Jussieu, 1789
Rhinanthaceae Ventenat, 1799
Antirrhinaceae Persoon, 1807
Caprariaceae Martinov, 1820
Chelonaceae Martinov, 1820
Digitalidaceae Martinov, 1820
Euphrasiaceae Martinov, 1820
Gratiolaceae Martinov, 1820
Linariaceae Martinov, 1820
Melampyraceae Richard *ex* Hooker & Lindley, 1821
Verbascaceae Rafinesque, 1821
Aragoaceae D. Don, 1835
Sibthorpiaceae D. Don, 1835
Calceolariaceae Rafinesque, 1838
Veronicaceae Rafinesque, 1838
Oxycladaceae (Miers) Schnizlein, 1855-1870
Limosellaceae J. Agardh, 1858
Erinaceae Duvau *ex* L. Pfeiffer, 1873
Paulowniaceae Nakai, 1949
 528. Spielmanniaceae J. Agardh, 1858
 529. Selaginaceae Choisy, 1823, *nom. cons.*
Hebenstretiaceae Horaninow, 1834
 530. Ellisiohyllaceae Honda, 1930
 531. Orobanchaceae Ventenat, 1799, *nom. cons.*
Phelypaeaceae Horaninow, 1834
Aeginetiaceae Livera, 1927
 190. Globulariales Dumortier, 1829
 532. Retziaceae Bartling, 1830
 533. Stilbaceae Kunth, 1831, *nom. cons.*
 534. Globulariaceae Candolle, 1805, *nom. cons.*
 191. Lentibulariales Lindley, 1833
Pinguicularales Dumortier, 1829
 535. Lentibulariaceae Richard, 1808, *nom. cons.*
Utriculariaceae Hoffmannsegg & Link, 1820
Pinguiculaceae Dumortier, 1829
 192. Acanthales Lindley, 1833
 536. Nelsoniaceae (Nees) Sreemadhavan, 1977
 537. Thunbergiaceae Bremekamp, 1954
 538. Meyeniaceae Sreemadhavan, 1977
 539. Mendonciaceae Bremekamp, 1954
 540. Acanthaceae A.L. Jussieu, 1789, *nom. cons.*
 541. Justiciaceae Rafinesque, 1838
 542. Thomandersiaceae Sreemadhavan, 1977
 193. Gesneriales Dumortier, 1829
 543. Gesneriaceae Dumortier, 1822, *nom. cons.*
Belloniaceae Martinov, 1820
Didymocarpaceae D. Don, 1822
Cyrtandraceae Jack, 1823
Besleriaceae Rafinesque, 1838
Ramondaceae Godron, 1850
 194. Callitrichales Dumortier, 1829
 544. Callitrichaceae Link, 1821, *nom. cons.*
Stellariaceae MacMillan, 1892, *nom. illeg. non* Dumortier, 1822
 195. Hippuridales Burnett, 1835
 545. Hippuridaceae Link, 1821,

nom. cons.

196. Verbenales Horaninow, 1847
 546. Verbenaceae Jaume Saint-Hilaire, 1805, *nom. cons.*
Viticaceae A.L. Jussieu, 1789
Lantanaceae Martinov, 1820
Aegiphilaceae Rafinesque, 1838
Siphonanthaceae Rafinesque, 1838
Durantaceae J. Agardh, 1858
Petreaceae J. Agardh, 1858
 547. Phrymaceae Schauer, 1847, *nom. cons.*
 548. Symphoremataceae (Meisner) Moldenke *ex Reveal* & Hoogland, 1991
 549. Cyclocheilaceae Marais, 1981
 550. Nesogenaceae Marais, 1981
 551. Avicenniaceae Endlicher, 1841, *nom. cons.*
 197. Lamiales Bromhead, 1838
Menthales Burnett, 1835
 552. Chloanthaceae Hutchinson, 1959
 553. Lamiaceae Lindley, 1836, *nom. cons.*
Labiatae A.L. Jussieu, 1789, *nom. cons.*; *nom. alt.*
Glechomaceae Martinov, 1820
Melittaceae Martinov, 1820
Salviaceae Sprengel *ex* Weinmann, 1824
Nepetaceae Horaninow, 1834
Menthaceae Burnett, 1835
 554. Salazariaceae Barkley, 1975.
Scutellariaceae Caruel, 1894
- RR. Butomanae Takhtajan *ex* Reveal, 1992
 198. Butomales Hutchinson, 1934
 555. Butomaceae Richard, 1816, *nom. cons.*
 SS. Alismatanae Takhtajan, 1967
 199. Alismatales Dumortier, 1829
 556. Limnocharitaceae Takhtajan *ex* Cronquist, 1981
 557. Alismataceae Ventenat, 1799, *nom. cons.*
Damasoniaceae Nakai, 1943
 200. Hydrocharitales Dumortier, 1829
Vallisneriales Nakai, 1949
Elodeales Nakai, 1950
 558. Hydrocharitaceae A.L. Jussieu, 1789, *nom. cons.*
Elodeaceae Dumortier, 1829
Stratiotaceae Link, 1829
Vallisneriaceae Link, 1829
Elismataceae Nakai, 1943, *nom. illeg.*
Enhalaceae Nakai, 1943
Blyzaceae (Ascherson & Gürcke) Nakai, 1949
 559. Thalassiaceae Nakai, 1943
 560. Halophilaceae J. Agardh, 1858
 TT. Najadanae Takhtajan *ex* Reveal, 1992
 201. Aponogetonales Hutchinson, 1934
 561. Aponogetonaceae J. Agardh, 1858, *nom. cons.*
 202. Scheuchzeriales B. Boivin, 1956
 562. Scheuchzeriaceae F. Rudolphi, 1830, *nom. cons.*
 203. Juncaginales Hutchinson, 1934
 563. Juncaginaceae Richard, 1808, *nom. cons.*
- Liliopsida Cronquist, Takhtajan & Zimmermann, 1966
 IX. Alismatidae Takhtajan, 1967

- Triglochinaceae* Chevallier, 1827
 564. *Lilaeaceae* Dumortier, 1829, *nom. cons.*
Heterostylaceae Hutchinson, 1934
 565. *Maundiaceae* Nakai, 1943
 204. *Potamogetonales* Dumortier, 1829
Ruppiales Nakai, 1950
 566. *Potamogetonaceae* Dumortier, 1829, *nom. cons.*
Hydrogetonaceae Link, 1829
 567. *Ruppiaceae* Horaninow *ex* Hutchinson, 1934, *nom. cons.*
 205. *Posidoniales* Nakai, 1943
 568. *Posidoniaceae* Hutchinson, 1934, *nom. cons.*, *emend. prop.*
Cauliniaceae J. Presl, 1846, *nom. illeg.*
 206. *Cymodoceales* Nakai, 1943
 569. *Cymodoceaceae* Norman Taylor, 1909, *nom. cons.*
 570. *Zannichelliaceae* Dumortier, 1829, *nom. cons.*
 207. *Zosterales* Nakai, 1943
 571. *Zosteraceae* Dumortier, 1829, *nom. cons.*
 208. *Najadales* Reichenbach, 1828
 572. *Najadaceae* A.L. Jussieu, 1789, *nom. cons.*
 K. *Triurididae* Takhtajan *ex* Reveal, 1992
 UU. *Triuridanae* Thorne *ex* Reveal, 1992
 209. *Triuridales* J.D. Hooker *in* Le Maout & Decaisne, 1876
 573. *Triuridaceae* Gardner, 1843, *nom. cons.*
 574. *Lacandoniaceae* E. Martínez & C.H. Ramos, 1989
 I. *Liliidae* Takhtajan, 1967
 IV. *Lilianae* Takhtajan, 1967
 210. *Melanthiales* R. Dahlgren *ex* Reveal, 1992
 575. *Melanthiaceae* Batsch, 1802, *nom. cons.*
Veratraceae Vest, 1818
Heloniadaceae J. Agardh, 1858
Nartheciaceae J.K. Small, 1933
Lophiolaceae Nakai, 1943
 576. *Petrosaviaceae* Hutchinson, 1934, *nom. cons.*
 577. *Campynemataceae* Dumortier, 1829
 211. *Alstroemeriales* Hutchinson, 1934
 578. *Alstroemeriaceae* Dumortier, 1829, *nom. cons.*
 212. *Liliales* Perleb, 1826
Colchicales Dumortier, 1829
Paridales Dumortier, 1829
 579. *Colchicaceae* Candolle, 1805, *nom. cons.*
Merenderaceae Mirbel, 1804
Bulbocodiaceae R.A. Salisbury, 1866
 580. *Uvulariaceae* A. Gray *ex* Kunth, 1843, *nom. cons. prop.*
Compsocaceae Horaninow, 1834
 581. *Liliaceae* A.L. Jussieu, 1789, *nom. cons.*
Liriaceae Batsch *ex* Borckhausen, 1797
Tulipaceae Batsch *ex* Borckhausen, 1797
Erythroniaceae Martinov, 1820
Fritillariaceae R.A. Salisbury, 1866
 582. *Calochortaceae* Dumortier, 1829
 583. *Medeolaceae* (S. Watson) Takhtajan, 1987
 584. *Trilliaceae* Lindley, 1846, *nom. cons.*

- Paridaceae* Dumortier, 1827
 213. Iridales Dumortier, 1829
Iriales Lindley, 1836
 585. Geosiridaceae Jonker, 1939,
nom. cons.
 586. Iridaceae A.L. Jussieu,
 1789, *nom. cons.*
Crocaceae Vest, 1818
Iziaceae Horaninow, 1834
Galaxiaceae Rafinesque, 1836
Gladiolaceae Rafinesque, 1838
Hewardiaceae Nakai, 1943, *nom.*
illeg.
Isophysidaceae (Hutchinson) F.
 Barkley, 1948
 214. Tecophilaeales Traub *ex*
 Reveal, 1993
 587. Tecophilaeaceae F. Ley-
 bold, 1862, *nom. cons.*
Androsynaceae R.A. Salisbury,
 1866
Cyanellaceae R.A. Salisbury,
 1866
Conantheraceae (D. Don) J.D.
 Hooker, 1873
 588. Cyanastraceae Engler,
 1900, *nom. cons.*
 589. Eriospermaceae Endlicher,
 1841
 215. Burmanniales Heintze, 1927
 590. Burmanniaceae Blume,
 1827, *nom. cons.*
Tripterellaceae Dumortier, 1829
 591. Thismiaceae J. Agardh,
 1858, *nom. cons.*
 592. Corsiaceae Beccari, 1878,
nom. cons.
 216. Asparagales Bromhead, 1838
 593. Convallariaceae Horani-
 now, 1834
Aspidistraceae Endlicher, 1841
Platymetraceae R.A. Salisbury,
 1866, *nom. illeg.*
Polygonataceae R.A. Salisbury,
 1866
 594. Ophiopogonaceae Endlich-
 er, 1841
Peliosanthaceae R.A. Salisbury,
 1866
 595. Asparagaceae A.L. Jussieu
 1789, *nom. cons.*
 596. Ruscaceae Sprengel *ex*
 Hutchinson, 1934, *nom. cons.*
 217. Asteliales Dumortier, 1829
 597. Dracaenaceae R.A. Sal-
 isbury, 1866, *nom. cons.*
Sansevieriaceae Nakai, 1936
 598. Nolinaceae Nakai, 1943
 599. Herreriaceae Endlicher,
 1841
 600. Asteliaceae Dumortier,
 1829
 218. Hanguanales R. Dahlgren
ex Reveal, 1992
 601. Hanguanaceae Airy Shaw,
 1965
 219. Agavales Hutchinson, 1934
 602. Asphodelaceae A.L. Jussieu
 1789
 603. Aloaceae Batsch, 1802
 604. Anthericaceae J. Agardh,
 1858
Lazmanniaceae Bubani, 1901-
 1902
 605. Aphyllanthaceae Bur-
 nett, 1835
 606. Luzuriagaceae J.P. Lotsy,
 1911
 607. Phormiaceae J. Agardh,
 1858
Dianellaceae R.A. Salisbury, 1866
 608. Doryanthaceae R. Dahlgren
 & Clifford, 1985
 609. Lanariaceae Huber *ex* R.
 Dahlgren, 1988
 610. Hemerocallidaceae R. Brow

- 1810
 611. Agavaceae Endlicher, 1841,
nom. cons.
Yuccaceae J. Agardh, 1858
 612. Hostaceae B. Mathew,
 1988, *nom. cons. prop.*
Funkiaceae Horaninow, 1834
 613. Blandfordiaceae Dahlgren
 & Clifford, 1985
 614. Dasypogonaceae Dumor-
 tier, 1829
Kingiaceae Endlicher, 1838
 615. Lomandraceae J.P. Lotsy,
 1911
Xerotaceae Endlicher, 1838, *nom.*
illeg.
 616. Calectasiaceae Endlicher,
 1838
 617. Xanthorrhoeaceae Dumor-
 tier, 1829, *nom. cons.*
 20. Alliales Traub, 1972
 618. Ixiolirionaceae (Pax) Nakai,
 1943
 619. Hyacinthaceae Batsch *ex*
 Borckhausen, 1797
Scillaceae Vest, 1818
Eucomidaceae R.A. Salisbury,
 1866
Lachenaliaceae R.A. Salisbury,
 1866
Ornithogalaceae R.A. Salisbury,
 1866
 620. Hesperocallidaceae Traub,
 1972
 621. Alliaceae J. Agardh, 1858,
nom. cons.
Gilliesiaceae Lindley, 1826
Agapanthaceae Voigt, 1850
Cepaceae R.A. Salisbury, 1866
Themidaceae R.A. Salisbury,
 1866
Tulbaghiaceae R.A. Salisbury,
 1866
 622. Milulaceae Traub, 1972
 221. Amaryllidales Bromhead,
 1840
Narcissales Dumortier, 1829
 623. Amaryllidaceae Jaume
 Saint-Hilaire, 1805, *nom. cons.*
Narcissaceae A.L. Jussieu, 1789
Leucojaceae Batsch *ex* Borck-
 hausen, 1797
Crinaceae Vest, 1818
Brunsvigiaceae Horaninow, 1834
Galanthaceae G. Meyer, 1836
Gethyllidaceae Rafinesque, 1838
Pancratiaceae Horaninow, 1847
Abaminaceae J. Agardh, 1858,
nom. illeg.
Cyrtanthaceae R.A. Salisbury,
 1866
Haemanthaceae R.A. Salisbury,
 1866
Oporanthaceae R.A. Salisbury,
 1866
Strumariaceae R.A. Salisbury,
 1866
Zephyranthaceae R.A. Salisbury,
 1866
 624. Hypoxidaceae R. Brown,
 1814, *nom. cons.*
 222. Velloziales R. Dahlgren *ex*
 Reveal, 1992
 625. Velloziaceae Endlicher,
 1841, *nom. cons.*
Barbaceniaceae Arnott, 1842
 626. Acanthochlamydaceae (S.C.
 Chen) P.C. Kao, 1992
 223. Smilacales Lindley, *Niz. Pl.*
 23. 1833
 627. Philesiaceae Dumortier,
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LITERATURE CITED

- Bedell, H.G. & J.L. Reveal. 1982a. Amended outlines and indices for six recently published systems of angiosperm classification. *Phytologia* 51:65-156.
- . 1982b. A synoptical review of a revised classification of Liliopsida (Magnoliophyta) as proposed by Dahlgren and Clifford. *Phytologia* 52:179-183.
- Benson, L. 1957. *Plant Classification*. D.C. Heath & Co., Boston, Massachusetts.
- Boivin, B.B. 1956. Les familles des Trachéophytes. *Bull. Soc. Bot. France* 103:490-505.
- Brummitt, R.K. (comp.). 1992. *Vascular Plant Families and Genera*. Kew, Great Britain.
- Cronquist, A. 1957. Outline of a new system of families and orders of dicotyledons. *Bull. Jard. Bot. Bruxelles* 27:13-40.
- . 1961. *Introductory Botany*. Harper & Brothers, New York, New York.
- . 1968. *The Evolution and Classification of Flowering Plants*. Houghton & Mifflin, Boston, Massachusetts.
- . 1981. *An Integrated System of Classification of Flowering Plants*. Columbia University Press, New York, New York.
- . 1988. *The Evolution and Classification of Flowering Plants*, 2nd edit. New York Botanical Garden, Bronx, New York.
- , A. Takhtajan, & W. Zimmermann. 1966. On the higher taxa of Embryobionta. *Taxon* 15:129-134.
- Dahlgren, G. 1989a. "The last Dahlgrenogram: System of classification of the dicotyledons," pp. 249-260. In: K. Tan, R.R. Mill, & T.S. Elias (eds.), *Plant Taxonomy, Phytogeography and Related Subjects*. Edinburgh University Press, Edinburgh, Great Britain.
- . 1989b. An updated angiosperm classification. *J. Linn. Soc., Bot.* 100:197-203.

- Dahlgren, R.M.T. 1975. A system of classification of the angiosperms to be used to demonstrate the distribution of characters. *Bot. Not.* 128:119-147.
- . 1980. A revised system of classification of the angiosperms. *Bot. J. Linn. Soc.* 80:91-124.
- . 1983. General aspects of angiosperm evolution and macrosystematics. *Nordic J. Bot.* 3:119-149.
- & K. Bremer. 1985. Major clades of the angiosperms. *Cladistics* 1:349-368.
- & H.T. Clifford. 1982. *The Monocotyledons: A Comparative Study*. Academic Press, London, Great Britain.
- & P.F. Yeo. 1985. *The Families of the Monocotyledons: Structure, Evolution, and Taxonomy*. Springer-Verlag, New York, New York.
- , S. Rosendal-Jensen, & B.J. Nielsen. 1981. "A revised classification of the angiosperms with comments on correlation between chemical and other characters," pp. 149-204. In: D.A. Young & D.S. Seigler (eds.), *Phytochemistry and Angiosperm Phylogeny*. Praeger Publishers, New York, New York.
- Deyl, M. 1955. The evolution of the plants and the taxonomy of the monocotyledons. *Acta Mus. Nat. Pragae ser. B*, 11(6):1-143.
- Dostál, J. 1957. *Botanická Nomenklatura*. Československá Akademie ved, Praha, Czechoslovakia.
- Ehrendorfer, F. 1983. *Samenpflanzen. Strasburger's Lehrbuch der Botanik*. Gustav Fischer Verlag, Stuttgart, Germany.
- Engler, A. 1964. *Syllabus der Pflanzenfamilien*. 12th ed. Herausgegeben von H. Melchior. Band II, Angiospermen. Gebrüder Borntraeger, Berlin, Germany.
- Erdtman, G. 1952. *Pollen Morphology and Plant Taxonomy: Angiosperms*. Almqvist & Wiksell, Stockholm, Sweden.
- . 1966. *Pollen Morphology and Plant Taxonomy: Angiosperms*. Almqvist & Wiksell, Stockholm, Sweden.
- Gibbs, R.D. 1974. *Chemotaxonomy of Flowering Plants*. 4 vols. McGill-Queen's University Press, Montreal, Canada.

- Goldberg, A. 1986. Classification, evolution, and phylogeny of the families of dicotyledons. *Smithsonian Contr. Bot.* 58.
- . 1989. Classification, evolution, and phylogeny of the families of monocotyledons. *Smithsonian Contr. Bot.* 71.
- Greuter, W. 1991. Proposals to amend the Code, and report of Special Committee 6B: Provisions for granting nomenclatural protection to listed names in current use. *Taxon* 40:669-677.
- Greuter, W., H.M. Burdet, W.G. Chaloner, V. Demoulin, R. Grolle, D.L. Hawksworth, D.H. Nicolson, P.C. Silva, F.A. Stafleu, E.G. Voss, & J. McNeill (editors.). 1988. *International Code of Botanical Nomenclature*, adopted by the Fourteenth International Botanical Congress, Berlin, July–August 1987. *Regnum Veg.* 118.
- Gunn, C.R., J.H. Wiersema, C.A. Ritchie, J.H. Kirkbride, Jr. 1992. Families and genera of spermatophytes recognized by the Agricultural Research Service. U.S.D.A. Techn. Bull. 1796.
- Heywood, V.H. (ed.). 1978. *Flowering Plants of the World*. Elsevier, Oxford, Great Britain.
- Huber, H. 1969. Die Samenmerkmale und Verwandtschaftsverhältnisse der Liliifloren. *Mitt. Bot. Staats. München* 8:219-538.
- Hutchinson, J. 1959. *The Families of Flowering Plants*, 2nd ed. Clarendon Press, Oxford, Great Britain.
- . 1969. *Evolution and Phylogeny of Flowering Plants*. Academic Press, London, Great Britain.
- . 1973. *The Families of Flowering Plants Arranged According to a New System Based on their Probable Phylogeny*, 3rd ed. Clarendon Press, Oxford, Great Britain.
- Kimura, Y. 1953. The system and the phylogenetic tree of plants. *J. Jap. Bot.* 28:97-104.
- . 1956. Système et phylogénie des monocotylédones. *Notul. Syst. Paris* 15:137-159.
- Mabberley, D.J. 1987. *The Plant-Book: A Portable Dictionary of the Higher Plants*. Cambridge University Press, Cambridge, Great Britain.
- Novák, F.A. 1954. Systém angiosperm. *Preslia* 26:337-364.

- . 1961. *Vyssi Rostliny*. Československá Akademie věd, Praha, Czechoslovakia.
- Pulle, A.A. 1952. *Compendium van de Terminologie, Nomenclatuur en Systematiek de Zaadplanten*. Bohn, Scheltema, & Holkema, Utrecht, Netherlands.
- Rendle, A.B. 1963. *The Classification of Flowering Plants*. Cambridge University Press, Cambridge, Great Britain.
- Reveal, J.L. 1992a. Validation of subclass and superordinal names in Magnoliophyta. *Novon* 2:235-237.
- . 1992b. Validation of ordinal names of extant vascular plants. *Novon* 2:238-240.
- . 1993. Automatically typified superordinal and ordinal names for the flowering plants (Magnoliophyta) as recognized by Thorne (1992) and arranged following the principles of priority, autonymy, and the substitution of alternative names. *Phytologia* 74:193-202.
- & R.D. Hoogland. 1991. Protected plant family names - a new list for consideration. *Regnum Veg.* 123:243-249.
- Rouleau, E. 1981. *Guide to the Generic Names Appearing in the Index Kewensis and its Fifteen Supplements*. Chatelain, Lac de Brome, Canada.
- Soó, R. 1953. Die modernen Grundsätze der Phylogenie im neuen System der Blütenpflanzen. *Acta Biol. Acad. Sci. Hungaricae* 4:257-306.
- . 1961. Present aspect of evolutionary history of Telomophyta. *Ann. Univ. Sci. Budapest, Biol.* 4:167-178.
- . 1967. Die modernen Systeme der Angiospermen. *Acta Bot. Acad. Sci. Hungaricae* 13:201-233.
- Stebbins, G.L. 1974. *Flowering Plants: Evolution Above the Species Level*. Belknap Press, Cambridge, Massachusetts.
- Takhtajan, A.L. 1959. *Die Evolution der Angiospermen*. Gustav Fischer, Jena, Germany.
- . 1967. *Systema et Phylogenia Magnoliophytorum*. Officna Editoria "Nauka", Leningrad, U.S.S.R.
- . 1969. *Flowering Plants: Origin and Dispersal*. Oliver & Boyd, Edinburgh, Great Britain.

- . 1970. *Origin and Dispersal of the Flowering Plants*. Officna Editoria "Nauka", Leningrad, U.S.S.R.
- . 1973. *Evolution und Ausbreitung der Blütenpflanzen*. Gustav Fischer, Jena, Germany.
- . 1980. Outline of the classification of flowering plants (Magnoliophyta). *Bot. Rev.* 46:225-359.
- . 1983. "The systematic arrangement of dicotyledonous families," pp. 180-201. In: C.R. Metcalfe & L. Chalk, *Anatomy of the Dicotyledons*, 2nd ed. Volume II. Clarendon Press, Oxford, Great Britain.
- . 1985. *Anatomia Seminum Comparativa. Tomus I. Liliopsida seu Monocotyledones*. Officna Editoria "Nauka", Leningrad, U.S.S.R.
- . 1986. *Floristic Regions of the World*. University of California Press, Berkeley, California.
- . 1987. *Systema Magnoliophytorum*. Officna Editoria "Nauka", Leningrad, U.S.S.R.
- Thorne, R.F. 1968. Synopsis of a putative phylogenetic classification of the flowering plants. *Aliso* 6:57-66.
- . 1974. A phylogenetic classification of the Annoniflorae. *Aliso* 8:147-209.
- . 1976. A phylogenetic classification of the Angiospermae. *Evol. Biol.* 9:35-106.
- . 1977. Some realignments in the Angiospermae. *Nordic J. Bot.* 3: 85-117.
- . 1981. "Phytochemistry and angiosperm phylogeny: A summary statement," pp. 233-295. In: D.A. Young & D.S. Seigler (eds.), *Phytochemistry and Angiosperm Phylogeny*. Praeger Publishers, New York, New York.
- . 1983. Proposed new realignments in the angiosperms. *Nordic J. Bot.* 3:85-117.
- . 1992a. An updated phylogenetic classification of the flowering plants. *Aliso* 13:365-389.

———. 1992b. Classification and geography of the flowering plants. Bot. Rev. 58:225-348.

Willis, J.C. 1973. *A Dictionary of the Flowering Plants and Ferns*, 8th ed. Revised by H.K. Airy Shaw. Cambridge University Press, London, Great Britain.

ERRATUM

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In MacRoberts & MacRoberts (1993), we reported that the age estimated from cores of *Pinus palustris* P. Mill. in two glades ranged from 120 to 380 years old. The upper figure is a miscalculation (one measurement was doubled) and the correct range is 120 to 220 years old.

LITERATURE CITED

- MacRoberts, M.H. & B.H. MacRoberts. 1993. Why don't west Louisiana bogs and glades grow up into forests? *Phytologia* 74:26-34.

A NEW SPECIES OF *PERITYLE* (ASTERACEAE, HELENIEAE) FROM
SONORA, MEXICO

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ABSTRACT

A new species, *Perityle alamosana* B.L. Turner, is described from southern Sonora, México. It is related to *P. batopilensis* and *P. gentryi* but readily distinguished by a combination of features including erect habit, glandular pubescent stems, and well developed ray florets.

KEY WORDS: Asteraceae, Helenieae, *Perityle*, México, Sonora

Routine identification of Mexican Asteraceae has revealed the following novelty.

Perityle alamosana B.L. Turner, *sp. nov.* TYPE: MEXICO. Sonora: Rancho San Pedro and upper entrance of the cañon, 4 km N of Alamos (108° 42.3' W, 27° 02.8' N), "Evergreen forest", 480 m, 13-15 Mar 1991, *P.S. Martin, C. Lindquist, & S. Meyer s.n.* (HOLOTYPE: TEX!; Isotype: ARIZ).

Peritylae batopilensi A.M. Powell, similis sed caulibus ac pedicellis dense glandulosi-pubescentibus (vs. dense pilosis trichomatibus eglandulosis translucetibus) et capitulis radiatis (vs. eradiatis) differt.

Erect suffruticose perennial herbs 10-20 cm high, the basal portions decidedly woody. Stems densely glandular pilose with hairs ca. 0.25 mm long, interspersed among these a smattering of much longer eglandular translucent hairs 1-2 mm long. Midstem leaves mostly 2.0-3.5 cm long, 1.5-2.5 cm wide; petioles 1.0-1.5 cm long, pubescent like the stems; blades deltoid to cordate in outline, the undersurfaces atomiferous glandular and moderately pilose,

especially along the veins, the margins irregularly lacerate-dentate. Heads radiate, single on peduncles 1.5-2.5 cm long, the latter pubescent like the stems. Involucres campanulate, 5.5-6.0 mm high, the bracts pubescent like the peduncles. Ray florets ca. 8, the ligules yellow, ca. 6 mm long, 2 mm wide. Disk florets 20-30, the corollas yellow, 3.5-4.0 mm long, the tube ca. 1 mm long, glandular pubescent, the lobes ca. 0.5 mm long, each usually possessing 1-3, translucent hairs. Anthers yellow. Style branches linear, gradually acuminate. Achenes (immature) ca. 3 mm long, the body sparsely hispid, otherwise glabrous, epappose.

This species is closely related to *Perityle batopilensis* A.M. Powell and *P. gentryi* A.M. Powell; indeed, I had considered both of the latter to be synonymous in an early treatment of *Perityle* for México. However, more detailed examination of the type material of *P. batopilensis* and *P. gentryi* (TEX!) has now convinced me that these are good species. These several taxa belong to the subgenus *Laphamia* (sensu Powell 1973, 1983) and have a syndrome of characters that relate them: similar campanulate involucres with similar vestiture, short glandular hairs, long translucent eglandular hairs, or combinations thereof, and similar disk corollas, the lobes possessing 1-3 translucent hairs. The following couplets readily distinguish the taxa.

1. Stems repent or trailing. *P. gentryi*
1. Stems erect or ascending. (2)
 2. Stems pilose with mostly translucent eglandular hairs 1-2 mm long; ray florets with ligules absent; Chihuahua. *P. batopilensis*
 2. Stems pilose with mostly glandular hairs; ray florets ligulate; Sonora. *P. alamosana*

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I am grateful to my colleague Guy Nesom for the Latin diagnosis and to him and Mike Powell of Sul Ross State University for reviewing the manuscript.

LITERATURE CITED

- Powell, A.M. 1973. Taxonomy of *Perityle* ... Sect. *Laphamia* Sida 5:61-128.
- . 1983. *Perityle* (Asteraceae), new species and notes. Madroño 30:217-225.

DARCYA (SCROPHULARIACEAE), A NEW GENUS FROM CENTRAL AND SOUTH AMERICA

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ABSTRACT

Darcya, a new genus belonging to the Scrophulariaceae is proposed. It is represented by three localized species previously treated within the genus *Stemodia* (s.l.), as follows: **D. costaricensis** (B.L. Turner) B.L. Turner, *comb. nov.*, from Costa Rica; **D. mutisii** (Fern. Alonso) B.L. Turner, *comb. nov.*, from Colombia; and **D. reliquiarum** (D'Arcy) B.L. Turner & C. Cowan, *comb. nov.*, from Panamá. Descriptions of the Central American taxa are provided, along with a comprehensive key for identification purposes. *Darcya* does not appear to be especially close to *Stemodia* (s.l.), possessing a combination of unique characters not found in that genus or yet other genera of the tribe Gratioleae in which it is positioned.

KEY WORDS: *Darcya*, *Stemodia*, Scrophulariaceae, Gratioleae

Preparation of a synopsis of *Stemodia* (s.l.) for North and South America (Turner & Cowan 1993; in prep.) has occasioned the present paper. In our treatment for the New World we recognized ca. 32 species. In studying the considerable diversity within this group it became apparent that the several species discussed here could not be readily accommodated within *Stemodia* (s.l.) nor could they be readily placed in any other genus of our acquaintance. This was presaged by D'Arcy who noted that the generitype, *Darcya reliquiarum*, did not conform to any of the intrageneric groupings or closely related genera proposed by Minod (1918), "and might warrant recognition at the generic level". *Darcya* has the calyx and capsular characters of *Stemodia* (s.l.), but differs from the rest of the species in having pubescent anthers, very short styles, well defined terminal racemes, 3-5 principal nerves arising from near the base of the blade, and peculiar estipitate trapezoidal seeds.

Darcya (Scrophulariaceae) B.L. Turner & C. Cowan, *gen. nov.*

Stemodia L. (*nom. cons.*) similis sed inflorescentia racemosa terminali, foliis nerviis principalibus 3-5, antheris pubescentibus, fructibus stylis corpor capsulae multo brevioribus, et seminibus trapezoidibus paginis alveolati-reticulatis distinctus.

Suffruticose perennial herbs to 1 m high. Leaves opposite, simple, petiolate, with 3 principal nerves or somewhat subpinnately nervate, the margins serrulate. Flowers arranged in terminal bracteate racemes. Calyx ebracteolate, the lobes free and essentially alike. Corollas tubular, markedly zygomorphic with well defined upper and lower lobes. Anther thecae pubescent dorsally with stiff white hairs. Capsules ovoid (4-5 mm high), 4 valvate, the styles persistent but much shorter than the body (ca. 0.3 mm long). Seeds trapezoidal, estipitate, alveolate-reticulate.

Type species, *Darcya reliquiarum* (D'Arcy) B.L. Turner & C. Cowan.

KEY TO SPECIES

1. Branches of the inflorescence glabrous; Costa Rica. *D. costaricensis*
1. Branches of the inflorescence pubescent; Panamá and Colombia. (2)
 2. Branches of the inflorescence glandular pubescent; corollas 7.0-8.2 mm long; Colombia. *D. mutisii*
 2. Branches of the inflorescence eglandular pubescent; corollas 4-5 mm long; Panamá. *D. reliquiarum*

Darcya costaricensis (B.L. Turner) B.L. Turner, *comb. nov.* BASIONYM: *Stemodia costaricensis* B.L. Turner, *Phytologia* 73:253. 1992. TYPE: COSTA RICA. Cartago Province: "1-4 km beyond first bridge within Hydroelectric Plant Property (Instituto Costaricensis Electricidad) en-route to the reservoir at the road terminus," 4800-4900 ft, common but very local, 4 Mar 1981, *F. Almeda & K. Nakai 4734* (HOLOTYPE: TEX!; Isotype: CAS).

Sprawling or trailing suffruticose glabrous perennial herbs 10-100 cm high. Midstem leaves mostly 2-4 cm long, 1.0-1.8 cm wide; petioles mostly 3-8 mm long; blades broadly ovate to triangular ovate, trinervate to somewhat subpinnately nervate, minutely punctate beneath, the margins serrulate. Flowers arranged in terminal bracteate racemes 3-8 cm long, the pedicels glabrous,

mostly 8-14 mm long. Calyx glabrous, ebracteolate, mostly 3-4 mm long, the lobes essentially alike and free to the base. Corollas reportedly deep violet blue and "Lobelia-like", the tube ca. 3 mm long, the upper 2 lobes 2.5-3.0 mm long, the lower 3 lobes mostly 3-6 mm long, the central lobe 4-6 mm long. Anther thecae ca. 0.5 mm long, pubescent, separated by a globose connective. Capsule ovate, ca. 4 mm long. Seeds numerous, brown, trapezoidal, finely ornate like the hull of a peanut, ca. 0.5 mm long.

DISTRIBUTION: Known only from the vicinity of the type locality; flowering November-January.

ADDITIONAL SPECIMENS EXAMINED: COSTA RICA. Cartago: Twenty or more specimens as given with the original description.

***Darcya reliquiarum* (D'Arcy) B.L. Turner & C. Cowan, *comb. nov.* BASIONYM:** *Stemodia reliquiarum* D'Arcy, Ann. Missouri Bot. Gard. 66:258. 1979. **TYPE:** PANAMA. Chiriquí: La Popa above Boquete, 1500-2500 m, 20 Mar 1977, *W.G. D'Arcy 10893* (**HOLOTYPE:** MO!; progeny of type material grown from seed, F!, K!, MO!).

Sprawling perennial herbs to 40 cm high. Stems sparingly branched, sparsely pubescent, glabrescent with age. Midstem leaves mostly 3-6 cm long, 1.4-2.6 cm wide; petioles 5-10 mm long, gradually tapered upon by the blades; blades ovate, with 3 principal nerves from near the base, glabrous or nearly so, minutely glandular punctate beneath, the margins irregularly serrate. Flowers arranged mostly in terminal bracteate racemes, the pedicels sparsely pilose, mostly 9-16 mm long. Sepals 2-4 mm long, all alike, without basal bracts, glabrous or nearly so. Corollas 4-5 mm long, blue, glabrous or nearly so, the lobes subequal, 2-3 mm long, minutely pubescent ventrally. Anther thecae ca. 0.25 mm long, pubescent dorsally with conspicuous stiff white hairs, the thecae sessile or one of these on a short stipelike connective. Capsule ovate (in outline), 4-5 mm high, the persistent style ca. 0.3 mm long, ca. as long as the stigmatic area, 4 valvate. Seeds trapezoidal, alveolate-reticulate, estipitate, ca. 0.3 mm long.

DISTRIBUTION: Panamá, where it is known only from cloud forests near Boquete, 1200-1700 m; flowering July-March.

D'Arcy provided an illustration of this species along with his original description.

***Darcya mutisii* (Fern. Alonso) B.L. Turner, *comb. nov.* BASIONYM:** *Stemodia mutisii* Fern. Alonso, An. Jard. Bot. Madrid 44:394. 1987. **TYPE:** COLOMBIA. Depto. de Cundinamarca, Mpio. de San Bernardo, 1600 m, 27 Jun 1948, *M. Schneider 581-A* (**HOLOTYPE:** COL 81234).

This recently described species was first collected and illustrated following the Real Expedición Botánica del Nuevo Reino de Granada, under the direction of Mutis (1760-1790). The original illustration has been republished in black and white by F. Alonso with his original description. While I have not examined type material, the illustration and description leaves little doubt that the plant concerned belongs to *Darcya*. Indeed, it is closely similar to both *D. reliquiarum* and *D. costaricensis* but readily distinguished by its glandular pubescent inflorescence.

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LITERATURE CITED

- Minod, M. 1918. Contribution à l'étude du genre *Stemodia* et du groupe des Stémodiées en Amerique. Bull. Soc. Bot. Geneve, ser. II 10:155-252.
- Turner, B.L. & C. Cowan. 1993. Taxonomic overview of *Stemodia* (Scrophulariaceae) for North America and the West Indies. Phytologia 74:61-103.

BOOKS RECEIVED

Inducible Plant Proteins, Their Biochemistry and Molecular Biology. J.L. Wray (ed.). Society for Experimental Biology Seminar Series 49. Cambridge University Press, 40 West 20th Street, New York, New York 10011-4211. 1992. xvi. 309 pp. \$89.95 (hardcover). ISBN 0-521-40170-4.

Drawn from a 1991 symposium, 54 authors have contributed fourteen papers to this volume. Papers treat topics such as proteins produced in response to or in conjunction with phosphate starvation, nitrate reduction, Crassulacean acid metabolism, growth hormones, ripening, nodule formation, anaerobic respiration, heat shock, cold shock, and light stimuli.

The Language of the Cell. Claude Kordon. Translated from the French by William J. Gladstone. McGraw-Hill Horizons of Science Series. McGraw-Hill, Inc., 1221 Avenue of the Americas, New York, New York 10020. 1993. 104 pp. \$9.95 (paper). ISBN 0-07-035875-3.

This book, part of a series to bring science to nonscientists, examines the transfer of information within and between cells. The mechanisms of message production, transfer, and receipt are discussed. Evolutionary processes affecting cellular communication are considered.

Life Strategies of Succulents in Deserts, With Special Reference to the Namib Desert. Dieter J. von Willert, Benno M. Eller, Marinus J.A. Werger, Enno Brinckmann, & Hans-Dieter Ihlenfeldt. Cambridge Studies in Ecology. Cambridge University Press, 40 West 20th Street, New York, New York 10011-4211. 1992. xx. 340 pp. \$89.95 (cloth). ISBN 0-521-24468-4 (cloth).

Chapter 1 defines, through morphology and anatomy, what the authors include as succulent plants, as well as information on evolution and geographic distribution of succulents. General information on deserts is found in Chapter 2, followed by a more detailed discussion of the Namib Desert in Chapter 3. Chapter 4 fills over half of the book and is devoted to discussion of physiological attributes of succulent plants. The final chapter examines life strategies of succulents.

The Olympic Rainforest, An Ecological Web. Ruth Kirk with Jerry Franklin. The University of Washington Press, P.O. Box 50096, Seattle, Washington 98145-5096. 1992. 128 pp. \$35.00 (cloth); \$17.50 (paper). ISBN 0-295-97195-9 (cloth); 0-295-97187-8 (paper).

A beautifully illustrated volume, this book provides a glimpse of the Olympic Rainforest. Other temperate wet forests are mentioned in the book, but the present work deals almost exclusively with the forests of the Olympic Peninsula. Animals as well as plants are included in the discussions and photographs.

Plant Biomechanics, An Engineering Approach to Plant Form and Function. Karl J. Niklas. The University of Chicago Press, 5801 Ellis Avenue, Chicago, Illinois 60637. 1992. xiv. 607 pp. \$75.00 (cloth); \$29.95 (paper). ISBN 0-226-58630-8 (cloth); 0-226-58641-6 (paper).

This book applies technical engineering analyses to plant structures. It contains basic introductory information on plants, mechanics, and effects of geometry on mechanics. These introductory chapters are followed with more in depth treatment of water relations, cell walls, mechanics of various tissue types, mechanics of organs, mechanics of the entire plant, fluid mechanics (primarily treating airflow), and effects of mechanical limiting principles on plant evolution. In addition to black and white photographs and line drawings, the book contains four color plates.

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Authors should arrange for two workers in the appropriate field to review the manuscript before submission. Copies of reviews should be forwarded to the editor with the manuscript. Manuscripts will not be published without review.

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